

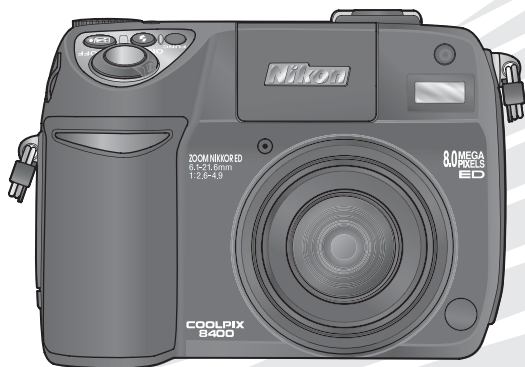
Nikon

En

The Nikon Guide to Digital Photography
with the

COOLPIX 8400


DIGITAL CAMERA



COOLPIX 8400 (En)

CE

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Symbols and Conventions

To make it easier to find the information you need, the following symbols and conventions are used:



This icon marks cautions, information that should be read before use to prevent damage to the camera.



This icon marks notes, information that should be read before using the camera.



This icon marks tips, additional information that may be helpful when using the camera.



This icon indicates that more information is available elsewhere in this manual or in the *Quick Start Guide*.

Introduction

First Steps

Basic Photography

Scene Mode

More on Photography

Movies

More on Playback

The Shooting Menu

The Playback Menu

The Setup Menu

Technical Notes

For Your Safety

To prevent damage to your Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them.

The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbol:



This icon marks warnings, information that should be read before using this Nikon product to prevent possible injury.

WARNINGS



Do not look at the sun through the viewfinder

Viewing the sun or other strong light source through the viewfinder could cause permanent visual impairment.



Turn off immediately in the event of malfunction

Should you notice smoke or an unusual smell coming from the camera, battery charger, or AC adapter (available separately), unplug the battery charger or AC adapter and remove the battery immediately, taking care to avoid burns. Continued operation could result in injury. After removing or disconnecting the power source, take the equipment to a Nikon-authorized service representative for inspection.



Do not use the camera or battery charger in the presence of flammable gas

Do not use electronic equipment in the presence of flammable gas, as this could result in explosion or fire.



Observe caution when using the camera strap

Never place the strap around the neck of an infant or child.



Keep out of reach of children

Particular care should be taken to prevent infants from putting the batteries or other small parts into their mouths.



Do not disassemble

Touching the internal parts of the camera or battery charger could result in injury. Repairs should be performed only by qualified technicians. Should the camera or battery charger break open as the result of a fall or other accident, take the product to a Nikon-authorized service representative for inspection after unplugging the product and/or removing the battery.



Observe the following precautions when handling the battery charger

- Keep dry. Failure to observe this precaution could result in fire or electric shock.
- Dust on or near the metal parts of the plug should be removed with a dry cloth. Continued use could result in fire.
- Do not handle the power cable or go near the battery charger during thunderstorms. Failure to observe this precaution could result in electric shock.
- Do not damage, modify, forcibly tug or bend the power cable, place it under heavy objects, or expose it to heat or flame. Should the insulation be damaged and the wires become exposed, take it to a Nikon-authorized service representative for inspection. Failure to observe these precautions could result in fire or electric shock.

- Do not handle the plug or battery charger with wet hands. Failure to observe this precaution could result in electric shock.

Observe proper precautions when handling batteries

Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries for use in this product:

- Before replacing the battery, turn the product off. If you are using an AC adapter, be sure it is unplugged.
- Use only rechargeable Nikon EN-EL7 lithium-ion batteries (supplied).
- When inserting the battery, do not attempt to insert it upside down or backwards.
- Do not short or disassemble batteries.
- Do not expose batteries to flame or to excessive heat.
- Do not immerse in or expose to water.
- Replace the terminal cover when transporting the battery. Do not transport or store with metal objects such as necklaces or hairpins.
- Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.
- The battery may be hot to the touch immediately after use or after the product has been used on battery power for an extended period. Before removing the battery, turn the camera off and allow the battery to cool.
- Discontinue use immediately should you notice any change in the battery, such as discoloration or deformation.

Use appropriate cables

When connecting cables to the input and output jacks, use only the cables provided or sold by Nikon for the purpose, to maintain compliance with product regulations.

Removing memory cards

Memory cards may become hot during use. Observe due caution when removing memory cards from the camera.

Handle moving parts with care

Be careful that your fingers or other objects are not pinched by the lens or other moving parts.

CD-ROMs

The CD-ROMs supplied with this device should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment.

Observe caution when operating the flash

Using the flash close to your subject's eyes could cause temporary visual impairment. Particular care should be observed if photographing infants, when the flash should be no less than one meter (39") from the subject.

When using the viewfinder

When operating the diopter adjustment control with your eye to the viewfinder, care should be taken to not put your finger in your eye accidentally.

Avoid contact with liquid crystal

Should the monitor break, care should be taken to avoid injury due to broken glass and to prevent liquid crystal from the monitor touching the skin or entering the eyes or mouth.

Notices

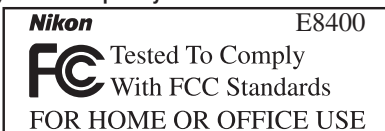
- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately).

Notice for customers in the U.S.A.

Federal Communications Commission (FCC) Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.



CAUTIONS

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

Interface Cables

Use the interface cables sold or provided by Nikon for your equipment. Using other interface cables may exceed the limits of Class B Part 15 of the FCC rules.

Notice for customers in the State of California

WARNING: Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. *Wash hands after handling.*

Nikon Inc.,
1300 Walt Whitman Road, Melville, New York
11747-3064, U.S.A. Tel.: 631-547-4200

Notice for customers in Canada

CAUTION

This class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

ATTENTION

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Notice Concerning Prohibition of Copying or Reproduction

Note that simply being in possession of material that has been digitally copied or reproduced by means of a scanner, digital camera or other device may be punishable by law.

• Items prohibited by law from being copied or reproduced

Do not copy or reproduce paper money, coins, securities, government bonds, or local government bonds, even if such copies or reproductions are stamped "Sample."

The copying or reproduction of paper money, coins, or securities which are circulated in a foreign country is prohibited.

Unless the prior permission of the government has been obtained, the copying or reproduction of unused postage stamps or post cards issued by the government is prohibited.

The copying or reproduction of stamps issued by the government and of certified documents stipulated by law is prohibited.



• Cautions on certain copies and reproductions

The government has issued cautions on copies or reproductions of securities issued by private companies (shares, bills, checks, gift certificates, etc.), commuter passes, or coupon tickets, except when a minimum of necessary copies are to be provided for business use by a company. Also, do not copy or reproduce passports issued by the government, licenses issued by public agencies and private groups, ID cards, and tickets, such as passes and meal coupons.

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Use Only Nikon Brand Electronic Accessories

Nikon COOLPIX cameras are designed to the highest standards and include complex electronic circuitry. Only Nikon brand electronic accessories (including battery chargers, batteries, AC adapters, and Speedlights) certified by Nikon specifically for use with this Nikon digital camera are engineered and proven to operate within the operational and safety requirements of this electronic circuitry.

THE USE OF NON-NIKON ELECTRONIC ACCESSORIES COULD DAMAGE THE CAMERA AND MAY VOID YOUR NIKON WARRANTY. The use of third-party rechargeable Li-ion batteries not approved by Nikon could interfere with normal operation of the camera or result in the batteries overheating, igniting, rupturing, or leaking.

For more information about Nikon brand accessories, contact a local authorized Nikon dealer.

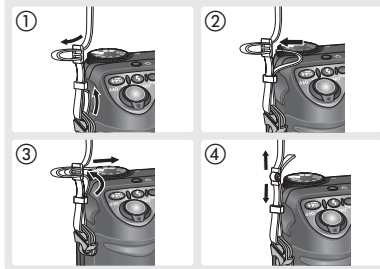
Introduction

Thank you for your purchase of a Nikon COOLPIX 8400 digital camera. This manual has been written to help you enjoy taking pictures with your Nikon digital camera. Read this manual thoroughly before use, and keep it where all those who use the product will read it.

Before using the camera, ready the camera strap and lens cap as shown below.

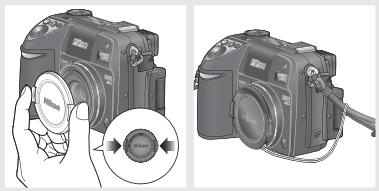
Attaching the Camera Strap

Attach the camera strap as shown below. Repeat for the second eyelet.



The Lens Cap

When replacing or removing the lens cap, press the tabs on either side of the cap to release the latch. To avoid losing the lens cap, use the cord provided to attach it to the camera as shown.



✍ Before Taking Important Pictures

Before taking pictures on important occasions (such as at weddings or before taking the camera on a trip), take a test shot to ensure that the camera is functioning normally. Nikon will not be held liable for damages or lost profits that may result from product malfunction.

💡 Life-Long Learning

As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

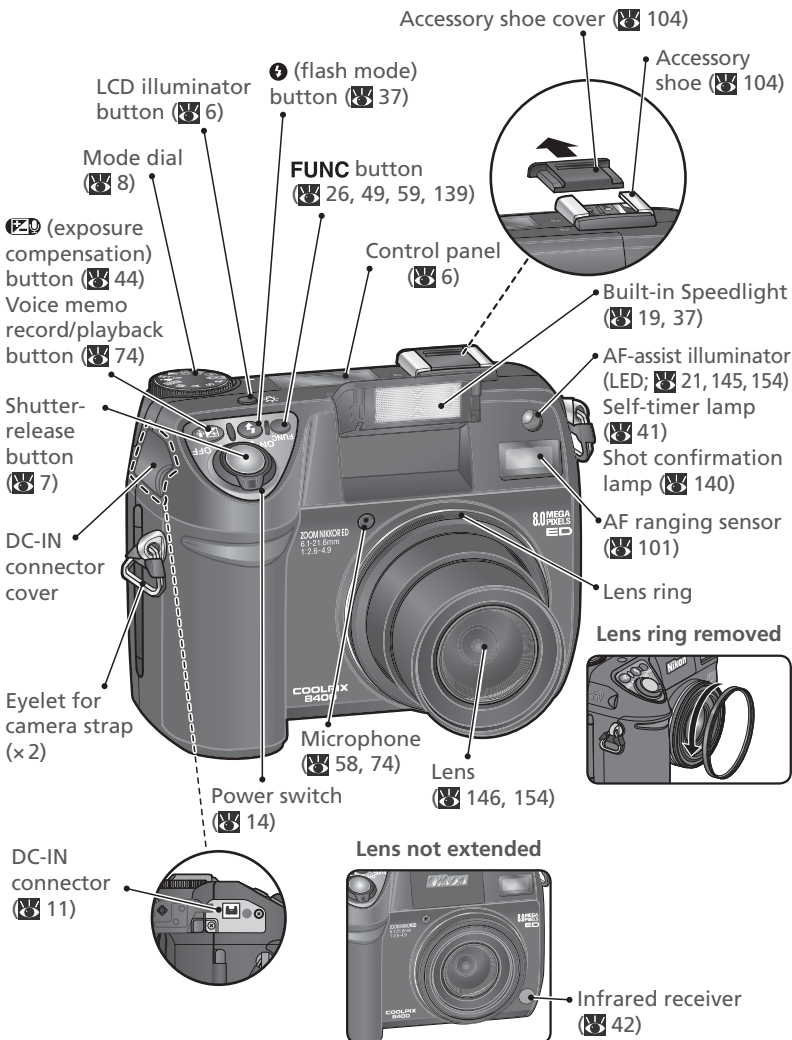
- For users in the U.S.A.: <http://www.nikonusa.com/>
- For users in Europe: <http://www.europe-nikon.com/support>
- For users in Asia, Oceania, the Middle East, and Africa: <http://www.nikon-asia.com/>

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the URL below for contact information:

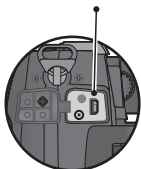
<http://nikonimaging.com/>

Parts of the Camera

Introduction



Digital I/O (USB) and audio/video (A/V) out connector (📖 75, 77, 80)



Zoom (Z/R) buttons (📖 18, 67, 70)

AE/AF-L (AE/AF lock) button (📖 22, 138)

Diopter adjustment control (📖 19)

Electronic viewfinder (📖 4, 5)

Digital I/O (USB) and audio/video (A/V) out connector cover

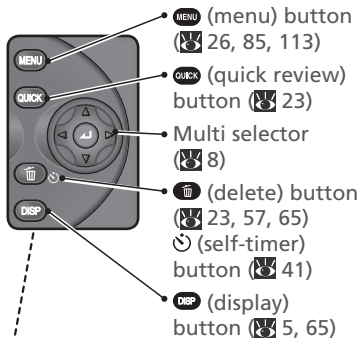
Speaker (📖 64, 74)

Monitor (📖 4, 5, 7)

MF-AF (manual focus/focus mode) button (📖 40, 56)

Tripod socket

SEL (monitor) button (📖 4)



Command dial

Memory card slot cover (📖 12, 13)

Memory card slot (📖 12)

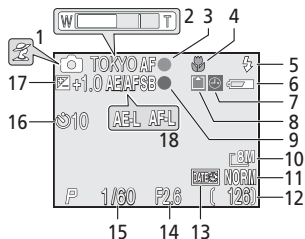


Battery-chamber cover (📖 10, 11)

Battery-chamber cover latch (📖 10)

The Shooting Display (Monitor/Electronic Viewfinder)

The following indicators are displayed during shooting¹:




- 1 Auto/scene mode² 17, 26
- 2 Zoom indicator³ 18
- Folder name⁴ 25, 116, 133
- 3 Focus indicator⁵ 20
- 4 Focus mode 40
- 5 Flash mode 38

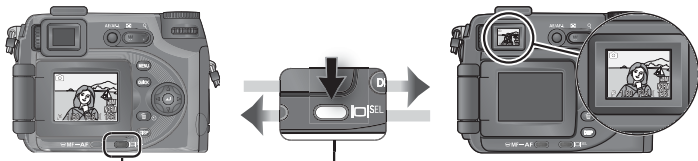
- 1 Icons displayed vary with camera settings.
- 2 Icon varies with mode or scene selected.
- 3 Displayed when zoom buttons are pressed.
- 4 Appears only in case of folders created or renamed using **Folders** option (116).

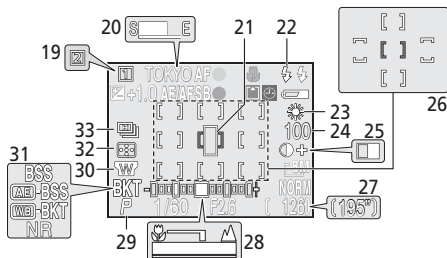
- 6 Battery level indicator⁶ 17
- 7 "Date not set" icon⁷ 15
- 8 Recording indicator 21
- 9 Flash indicator 20
- 10 Image size 35
- 11 Image quality 35
- 12 Number of exposures remaining 17
- 13 Date imprint indicator 142
- 14 Aperture 48, 49
- 15 Shutter speed 47, 49
- 16 Self-timer indicator 41
- 17 Exposure compensation 44
- 18 Exposure/focus lock 31, 63, 98

- 5 Displayed when shutter-release button is pressed halfway.
- 6 Appears when batteries are running low.
- 7 Appears when camera clock has not been set.

The SEL Button

The electronic viewfinder can be used to frame pictures when bright ambient lighting conditions make the display in the monitor difficult to see. Use the  SEL button to switch between the monitor and viewfinder.



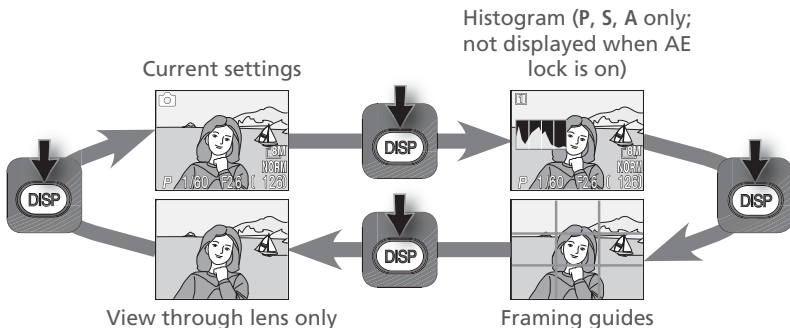


19	User Settings bank.....	95	27	Length of movie	58
20	Ultra HS recording indicator.....	89	28	Exposure display	49, 50
21	Spot metering target	87		Manual focus display	56
22	Flash mode for optional Speedlights.....	105	29	Exposure mode.....	46–49
23	White balance	54	30	Converter lens setting.....	97
24	Sensitivity (ISO equivalency)	52	31	Best Shot Selector (BSS).....	91
25	Image adjustment.....	93		Bracketing indicator.....	107
	Black-and-white indicator	94		Noise reduction	109
26	Focus areas ⁸	100	32	Metering mode	87
			33	Continuous shooting mode	89

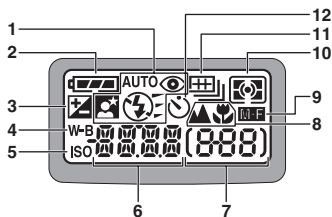
⁸ Five focus areas are available when **Auto** is selected for **AF-area mode** in **P, S, A, or M mode** (100). The active focus area lights when the camera focuses. Nine focus areas are displayed when **Manual** is selected in **P, S, A, or M mode** (100) or **Portrait**, **Night portrait**, or **Close up** is selected in scene mode (26).

The DISP Button

To hide or display shooting indicators, press the **DISP** button.



The Control Panel¹





1	Flash mode	38
2	Battery level indicator	17
3	Exposure compensation indicator	44
4	White balance indicator	54
5	Sensitivity (ISO equivalency) indicator	52

1 Control panel is shown with all elements lit for illustrative purposes.

6	Shutter speed ²	47, 49
	Aperture ²	48, 49
	Continuous mode	88
	Selected scene (scene mode)	26
	Movie mode	59
	White balance	53
	Image transfer status	77
	Exposure compensation	44
	Image mode	35
	Sensitivity (ISO equivalency)	51
	User Settings bank	95
7	Exposure count display (number of exposures remaining)	17
	Exposure indicator	50
8	Focus mode	40
9	Manual focus indicator	56
10	Metering mode	87
11	Continuous shooting mode	89
12	Self-timer	41

2 Press **FUNC** button to switch between shutter-speed and aperture displays (**S** and **A** modes excluded).

The Button

To view settings in the dark, press the  button ( 2). The LCD illuminator (control panel backlight) will light for about eight seconds or until the button is pressed again.

The Monitor



Fold out to use



Range of rotation



Frame self-portraits*



Stow on camera body



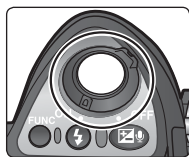
Storage position†

* Monitor shows mirror image of what will appear in final picture.

† If camera is on, monitor turns off and electronic viewfinder turns on automatically.

The Shutter-Release Button

The camera has a two stage shutter-release button. The camera sets focus and exposure when the button is pressed halfway. Focus and exposure will remain locked while the shutter-release button is kept in this position. To release the shutter, press the shutter-release button the rest of the way down.



Press halfway to lock focus and exposure

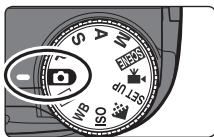


Press all the way down to shoot

✓ Do Not Use Excessive Force

Do not use excessive force when rotating the monitor. Failure to observe this precaution could damage the hinge connecting the monitor to the camera body.

The Mode Dial



To select a mode, align the mode icon with the “**—**” mark next to the mode dial.

Auto (17)

A simple “point-and-shoot” mode recommended for first time users of digital cameras.

Playback (65)

Play pictures back in the monitor.

WB (53)

Display a menu of white balance options.

ISO (51)

Display a menu of sensitivity (ISO equivalency) options.

PSAM (45)

Choose these modes for varying degrees of control over shutter speed and aperture.

SCENE Scene (26)

Choose from fifteen “scenes” suited to different subjects or shooting conditions and let the camera do the rest.

Movie (58)

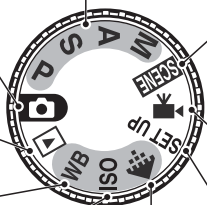
Choose from five movie modes.

SET UP Setup (130)

Display the setup menu, where you can perform such tasks as setting the camera clock and adjusting monitor brightness.

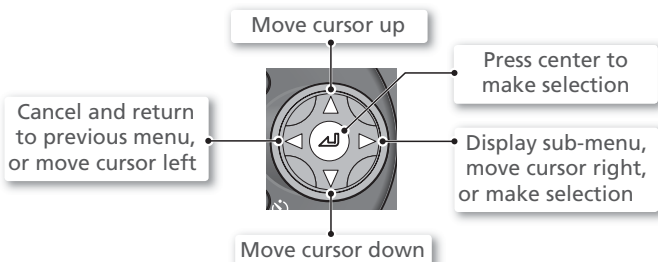
(33)

Display a menu of image quality and size options.



The Multi Selector

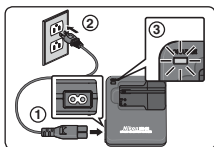
The multi selector is used to navigate through the camera menus.



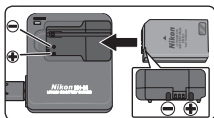
First Steps

Charging the Battery

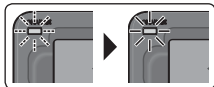
The camera uses a rechargeable Nikon EN-EL7 lithium-ion battery (supplied). Charge the battery before first use or when the battery is running low.



- 1 Connect the power cable**
Connect the power cable to the supplied MH-56 battery charger (①) and insert the wall plug into a power outlet (②). The CHARGE lamp will light to show that the charger is on (③).



- 2 Charge the battery**
Remove terminal cover and slide the EN-EL7 into the MH-56 terminals first. During charging, the CHARGE lamp shows battery status as follows:



CHARGE lamp starts blinking when battery is inserted. Charging is complete when lamp stops blinking.

CHARGE lamp	Description
Blinks	Battery charging.
On	Battery fully charged.
Flickers	Battery error. If ambient temperature is not 5–35°C (41–95°F), wait until temperature is in this range before charging. Otherwise unplug charger and remove battery immediately and take both devices to retailer or Nikon-authorized service representative.

About two and a half hours are required to charge a fully depleted battery.

- 3 Unplug the charger**
Remove the battery and unplug the charger.

✓ The MH-56 Battery Charger

Before using the MH-56, read and follow the warnings and cautions on pages ii–iii of this manual.

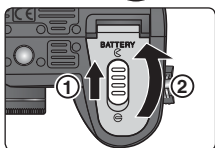
The MH-56 is for use with EN-EL7 batteries. Do not use with non-compatible batteries. The supplied power cable is intended solely for use with the MH-56 and is for domestic use only. It may be necessary to purchase another cable for use abroad; consult with a local Nikon-authorized retailer or service representative.

Inserting the Battery

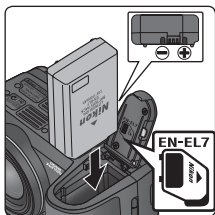
First Steps



- 1 Turn the camera off



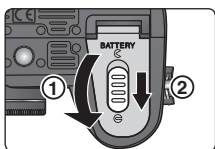
- 2 Open the battery-chamber cover
Slide the battery-chamber cover latch to the ☹ position (1) and flip the battery-chamber cover open (2).



- 3 Insert the battery
Insert a fully-charged EN-EL7 battery as shown in the label inside the battery-chamber cover.

✓ Inserting Batteries

Inserting the battery upside down or backwards could damage the camera. Check to be sure the battery is in the correct orientation.



- 4 Close the battery-chamber cover
Close the battery-chamber cover (1) and slide the latch to the ☹ position (2).

✓ EN-EL7 Batteries


Before using the EN-EL7, read and follow the warnings and cautions on pages ii–iii and 147 of this manual.

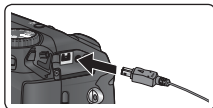
Do not use the battery at ambient temperatures below 0°C (32°F) or above 40°C (104°F). During charging, the temperature should be in the vicinity of 5–35°C (41–95°F). Note that the battery may become hot during use; wait for the battery to cool before charging. Failure to observe these precautions could damage the battery, impair its performance, or prevent it from charging normally.

✓ When the Battery Is Not in Use

When the battery is not in use, remove it from the camera or battery charger and replace the terminal cover. The camera and battery charger draw minute amounts of current even when off; if left in place, the battery could be drained to the point that it no longer functions. **Turn the camera off** before removing or inserting batteries. To remove the battery, open the battery-chamber cover as described in Step 2, above, and slide the battery out. Note that the battery may become hot during use; observe due caution when removing the battery.

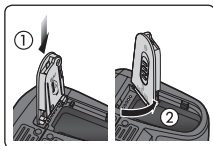
✓ Alternative Power Sources

To power the camera continuously for extended periods, use an EH-54 AC adapter (available separately;  143). **Do not, under any circumstances, use another make or model of AC adapter.** Failure to observe this precaution could result in overheating or in damage to the camera.

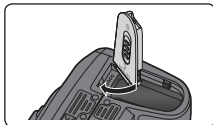


✂ Removing the Battery-Chamber Cover

To remove the battery-chamber cover when using the optional MB-CP10 battery pack, open the cover, press it down (①) and twist it off as shown (②).



Replace the battery-chamber cover when the battery pack is not in use. To replace the cover, insert one corner and press down while rotating the cover as shown until it clicks into place.



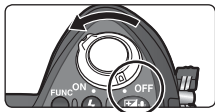
♻ Recycle Used Batteries

Used batteries are a valuable resource. Please recycle used batteries in accordance with local regulations.

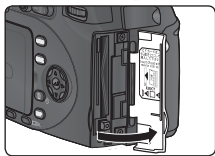
Inserting Memory Cards

The camera stores pictures on CompactFlash™ memory cards. See “Technical Notes: Approved Memory Cards” (📖 144) for a list of compatible cards.

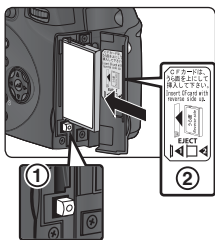
First Steps



1 Turn the camera off



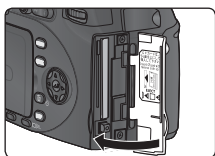
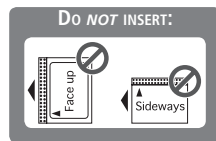
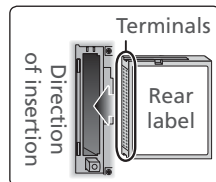
2 Open the memory card slot cover
A yellow notice detailing memory card insertion is placed in the memory card slot at shipment. Remove the notice and read the instructions.



3 Insert a memory card
Check that the eject button is all the way down (①) and then insert a memory card as shown in the label inside the memory card slot cover (②).

✓ Inserting Memory Cards

Insert memory cards terminals first. Inserting the card upside down or backwards could damage the camera or the card. Check to be sure the card is in the correct orientation.



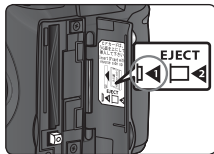
4 Close the memory card slot cover

✏ Format Memory Cards Before First Use

Memory cards must be formatted before first use. See “The Shooting Menu: CF Card Format” (📖 112).

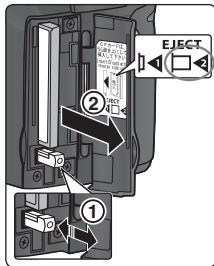
✓ The Eject Button

If the eject button is up when the card-slot cover is closed, closing the cover will partially eject the memory card, causing errors when the camera is turned on. Be sure the eject button is down before inserting memory cards.

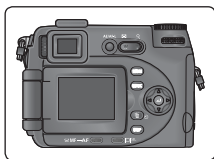


💡 Removing Memory Cards

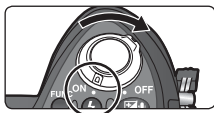
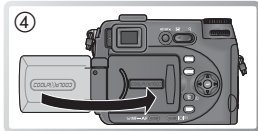
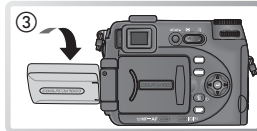
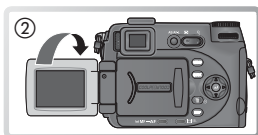
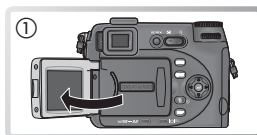
Memory cards can be removed without loss of data when the camera is off. To remove memory cards, turn the camera off and open the memory card slot cover. Press the eject button to pop it up (①), then press it again to partially eject the card (②). The card can then be removed by hand. Note that memory cards may become hot during use; observe due caution when removing memory cards.



Turning the Camera On



1 Ready the monitor



2 Turn the camera on

The first time the camera is turned on, a language-selection dialog will be displayed (15). Choose a language and set the time and date.

Turning the Camera Off

To turn the camera off, rotate the power switch to the off position. The displays will turn off and the lens will retract.



Auto Power Off (Standby Mode)

If no operations are performed for one minute (three minutes when menus are displayed), the monitor and electronic viewfinder will turn off automatically and the camera will enter standby mode, reducing the drain on the batteries (if the camera is powered by an optional AC adapter or the **Loop** option is selected during a slide show 120], the display will turn off after thirty minutes). To reactivate the display, press the **QUICK**, **MENU**, or **DISP** button, choose a new mode, or press the shutter-release button halfway.

The length of time before the camera enters standby mode can be changed using the **Auto off** option in the setup menu (138).

Basic Setup

1







Highlight **Deutsch** (German), **English**, **Español** (Spanish), **Français** (French), **Italiano** (Italian), **Nederlands** (Dutch), **Svenska** (Swedish), **日本語** (Japanese), **中文(简体)** (Simplified Chinese), **中文(繁體)** (Traditional Chinese), or **한글** (Korean).*

* Press **MENU** button to exit without selecting language.


2






Confirmation dialog displayed.

3





Highlight **Yes**.†

† Select **No** to exit to mode selected with mode dial. If time and date are not set, (date not set) icon will flash in monitor during shooting and all pictures will have time stamp of "00.00.0000 00:00." Movies will be dated "01.09.2004 00:00."


4






Display map of world time zones.

5





Select home time zone.

The Clock Battery

When the main battery is installed or an AC adapter is connected, the clock battery will charge in about 10 hours. When fully charged, the clock battery can provide several days of backup power. The clock may be reset when the battery runs low; *when the battery is exhausted, the DATE menu is displayed automatically.*

The Camera Clock

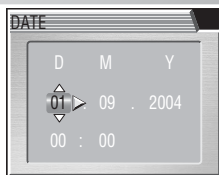
The camera clock is less accurate than most watches or household clocks. Check the clock regularly against more accurate timepieces and reset as necessary.

6



TIME ZONE menu displayed.*

7



Display DATE menu.

* If daylight saving time (☀ 132) is in effect in local time zone, highlight **DaylightSaving** and press center of multi selector. To return to Step 6, highlight current time zone. To return to Step 4, highlight **Time zone** and press multi selector right.

8



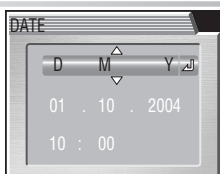
Edit Day (order of Day, Month, and Year may differ in some areas).

9



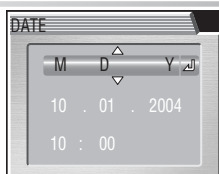
Select Month. Repeat steps 8–9 to edit Month, Year, hour, and minute.

10



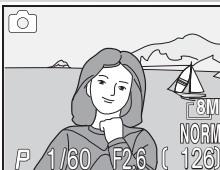
Highlight D M Y.

11



Choose order in which Day, Month, and Year will be displayed.

12





Exit to mode currently selected with mode dial. Note that time and date of recording will not be imprinted on pictures unless **Date** or **Date and time** is selected for **Date imprint** (☀ 142).

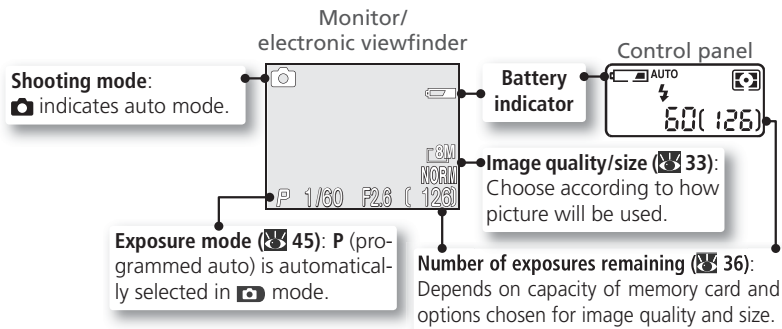
Basic Photography

This section describes how to take pictures in  (auto) mode, an automatic, “point-and-shoot” mode recommended for first-time users of digital cameras.






Step 1—Rotate the Mode Dial to



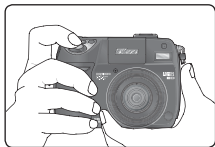
Rotate the mode dial to  and turn the camera on
The lens will extend and the monitor or electronic viewfinder will display a welcome message ( 135). The camera is ready to shoot when the view through the camera lens is displayed and the control panel lights.



The Battery Indicator

Shooting display	Control panel	Status	Notes
—		Battery fully charged.	Camera functions normally.
		Battery partially discharged.	
		Low battery. Ready spare battery.	If built-in Speedlight fires, monitor turns off while flash recharges.
WARNING!! BATTERY EXHAUSTED	 (flashes)	Battery exhausted.	No pictures can be taken until battery has been recharged or replaced.

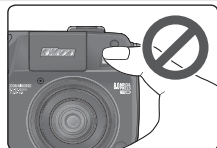
Step 2—Frame the Picture



- 1 Ready the camera**
Hold the camera steadily in both hands.

Don't Block the Shot

To avoid muffled sound or dark or partially obscured pictures, keep fingers and other objects away from the microphone, lens, built-in Speedlight, AF-assist lamp (LED), and AF ranging sensor.



- 2 Frame the subject**
The camera is equipped with two types of built-in zoom: optical zoom, in which the camera's tele-scoping lens can be used to magnify the subject up to 3.5x, and digital zoom, in which digital processing is used to further magnify the image up to 4x, for a total of 14x. Use the zoom buttons to frame your subject in the center of the monitor:

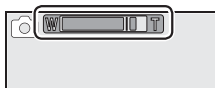
- Press the **W** button to zoom out from your subject, increasing the area visible in the frame.
- Press the **T** button to zoom in on your subject so that it fills a larger area of the frame.
- When the camera is zoomed in to maximum magnification, holding the **T** button down for about two seconds will trigger digital zoom, and the zoom indicator will turn yellow. Use the **T** and **W** buttons to adjust zoom in the digital zoom range. To cancel digital zoom, press **W** until the zoom indicator turns white.



Zoom out Zoom in



Indicator shows amount of zoom



Digital zoom



Middle zoom position Digital zoom

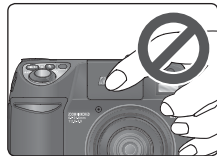


Wide angle

Telephoto

The Built-in Speedlight

In  mode, the built-in Speedlight will pop up automatically when the shutter-release button is pressed halfway if additional light is required for correct exposure. Do not place your fingers where they will obstruct the built-in Speedlight. If the Speedlight is prevented from popping up when the shutter-release button is pressed halfway, a message will be displayed ( 150).



Do not attempt to raise the Speedlight by hand. Failure to observe this precaution could result in damage to the Speedlight. To lower the Speedlight, gently press it straight down until it clicks into place. Do not apply force to the front, back, or sides.

Digital Zoom (103)

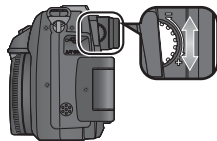
In digital zoom, data from the camera's image sensor are processed digitally, enlarging the center portion of the picture to fill the frame. Unlike optical zoom, digital zoom does not increase the amount of detail visible in the picture. Instead, details visible at maximum optical zoom are simply enlarged, producing a slightly "grainy" image.

When Lighting Is Poor


When lighting is poor, the image in the display is processed to compensate and some mottling may occur. This is normal and does not indicate a malfunction.

Viewfinder Focus

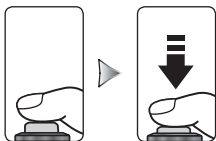
If the image in the electronic viewfinder seems blurred, rotate the diopter adjustment control until the image is in sharp focus. When operating the diopter control with your eye to the viewfinder, care should be taken to avoid accidentally putting your finger in your eye.



Display Lag

The image from the camera CCD must be processed before it can be displayed in the monitor or electronic viewfinder, resulting in a slight lag between the movement of the subject and the image in the display. This lag can be reduced by selecting **Quick response** for the **Monitor options > Release speed** option in the setup menu ( 133).

Step 3—Focus and Shoot



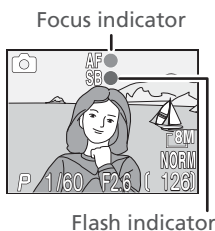
1 Focus

Press the shutter-release button halfway to set focus and exposure (📷 7). In 📷 mode, the camera will automatically focus on the subject at the center of the frame. Focus and exposure will lock while the shutter-release button is pressed halfway. If the subject is poorly lit and the flash is on, the built-in Speedlight will pop up automatically.

With the shutter-release button pressed halfway, check the focus and flash indicators:

Focus indicator	On (green)	Subject in focus.*
	Blinks green	Camera unable to focus on subject at center of frame. Using focus lock, focus on another subject at same distance, then recompose picture and shoot.
Flash indicator	On (red)	Built-in Speedlight will fire when picture is taken.
	Blinks red	Built-in Speedlight is charging.
	Off	Built-in Speedlight is off or not required.

* Always lights when focus is set to infinity (📷 40) or manual focus is used (📷 56).








2 Take the picture


Press the shutter release button the rest of the way down to take the picture. To prevent blur, press the shutter-release button down smoothly.






✓ During Recording

While pictures are being recorded to the memory card, a  (recording) or  (wait) icon will be displayed in the monitor or electronic viewfinder. The camera can continue to take pictures until the  icon is displayed. **Do not turn the camera off, eject the memory card, or remove or disconnect the power source while the  or  icon is displayed.** Cutting power or removing the memory card in these circumstances could result in loss of data or in damage to the camera or card.

✎ Number of Exposures Remaining

If the number of exposures remaining reaches zero, the message “OUT OF MEMORY” will be displayed in the monitor ( 148). No further pictures can be taken until:

- a new memory card is inserted ( 12)
- pictures are deleted ( 23, 114)

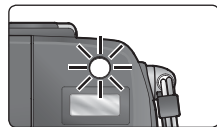
The “OUT OF MEMORY” message may clear from the display if a lower image quality or size is selected ( 33).

















✎ Low Battery

If the flash fires when the low battery icon is displayed, the monitor will turn off while the built-in Speedlight recharges.

🔦 The AF-Assist Illuminator

If lighting is poor, the AF assist illuminator will light when the shutter-release button is pressed halfway, allowing the camera to focus even when the subject is poorly lit. The AF-assist illuminator has a range of about 0.5–4 m (1’8”–13’). The AF-assist illuminator will not light if:



- Focus mode ( 40) is set to  (infinity) or manual focus is used ( 56)
- The center focus area is not selected when  (Portrait),  (Night portrait), or  (Close up) is chosen in scene mode ( 27–31) or **Manual** is chosen for **Focus options > AF area mode** ( 100)
-  (Landscape),  (Night landscape),  (Museum),  (Fireworks show),  (Sports), or  (Dusk/Dawn) is selected in scene mode ( 27–31)
- A setting other than **Time-lapse movie** is selected in movie mode ( 58)

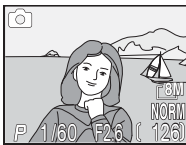
Getting Good Results with Autofocus

Autofocus performs best when there is contrast between the subject and the background and the subject is evenly lit. It does not perform well with very dark subjects (unless the AF-assist illuminator is on and the subject is within range of the illuminator), low-contrast scenes (e.g., where the subject is the same color as the background), scenes containing continuous repeating patterns or objects at different distances from the camera (e.g., where the subject is inside a cage), or subjects that are moving rapidly.

AF/AE Lock

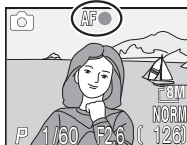
Focus and exposure are locked when the shutter-release button is pressed halfway, and remain locked while the shutter-release button is held in this position (focus lock). Focus lock can be used to take pictures of off-center subjects or in situations in which the camera is unable to focus using autofocus.

1 Focus



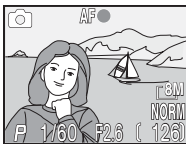
Position subject in center of frame and press shutter-release button halfway.

2 Check focus indicator



Check that focus indicator glows steadily, indicating that subject is in focus.

3 Recompose picture



Focus and exposure are locked while shutter-release button is pressed halfway.*


4 Take picture



Press shutter-release button rest of way down to take picture.

* Do not change distance between camera and subject while focus lock is in effect. If subject moves, release shutter-release button and focus again at new distance.

The AE/AF-L Button

Focus and exposure will also lock while the **AE/AF-L** button is pressed (if desired, the **AE/AF-L** button can be used to lock focus but not exposure, or vice versa;  139).



Step 4—View the Results (Quick Review/Full-Screen Review)

The **QUICK** button can be used to view pictures without leaving shooting mode.



1 Pictures played back in top left corner of display (quick review).

2 Press **QUICK** button again to display pictures full screen (full-screen review).

Use the multi selector to view additional pictures. Press the multi selector down or right to view pictures in the order recorded, up or left to view pictures in reverse order. To return to shooting mode, press the **QUICK** button a third time or press the shutter-release button halfway.

Deleting Unwanted Pictures (Full-Screen Review)

To delete the picture displayed in full-screen review, press the **DELETE** button. A confirmation dialog will be displayed; press the multi selector up or down to highlight an option and then press the center of the multi selector to make a selection.

- **Yes:** Delete the picture and return to full-screen review
- **No:** Exit to full-screen review without deleting the picture

Quick Review

Pressing the **DELETE** button will not delete pictures displayed in quick review.



Playback Mode

Pictures can also be viewed by rotating the mode dial to (playback mode; 65).

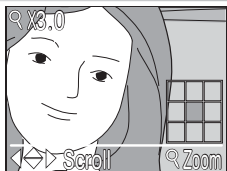
Playback Tips

Pictures are displayed briefly at low resolution while being read from the memory card. This makes it possible to scroll rapidly through the pictures in memory without waiting for each image to be displayed at full resolution.

Quick Playback Zoom

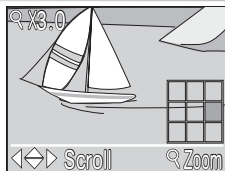
For an enlarged ($\times 3$) view of the picture currently displayed in full-screen review (823) or full-frame playback (865):

1



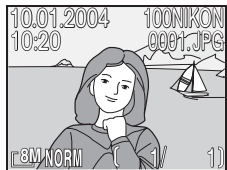
Zoom picture in $\times 3$. Center of picture is visible in display.

2



View other areas of picture. Area currently visible indicated by display in lower right corner.

3




End zoom and return to playback.






The zoom buttons can be used to zoom the picture in or out while quick playback zoom is in effect (870).

Image File and Folder Names

On the memory card, pictures are identified by file names with three parts: a four letter identifier, a four-digit file number assigned automatically by the camera in ascending order, and a three-letter extension (e.g., “DSCN0001.JPG”).

	Type	Identifier	Extension	
Original	RAW-quality still	DSCN	.NEF	33
	Hi-quality still	DSCN	.TIF	33
	Other still	DSCN	.JPG	33
	Movie	DSCN	.MOV	60
	Time-lapse movie	INTN	.MOV	60
Copy	Cropped copy	RSCN	.JPG	71
	Small copy	SSCN	.JPG	72
	Copy created using D-lighting option	FSCN	.JPG	73
Audio file	Voice memo (appended to original still)	DSCN	.WAV	74
	Voice memo (appended to cropped copy)	RSCN	.WAV	74
	Voice memo (appended to small copy)	SSCN	.WAV	74
	Voice memo (appended to D-lighting copy)	FSCN	.WAV	74

When a picture is viewed on the camera, the file number and extension appear in the top right corner of the display. The identifier is not displayed, but is visible when the picture is transferred to a computer.

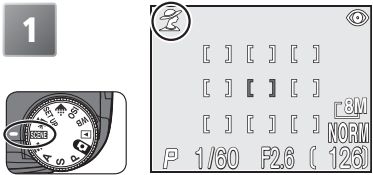
Pictures are stored in folders named with a three-digit folder number followed by a five-character identifier (e.g., “100NIKON”). The default identifier is NIKON; if desired, folders with other identifiers can be created and pictures organized by theme ( 116). Each sequence of pictures taken using interval-timer photography, **Ultra HS**, or panorama assist is stored in a separate folder with its own identifier: “INTVL” for interval timer photography ( 90), “N_” plus a three-digit sequence number for **Ultra HS** (e.g., “101N_001”;  88), or “P_” plus a three-digit sequence number for panorama assist (e.g., “101P_001”;  32). Folders can hold up to 200 pictures; if a picture is taken when the current folder contains 200 pictures, a new folder will be created by adding one to the current folder number. If a picture is taken when the current folder contains a picture numbered 9999, a new folder will be created and file numbering will begin again from 0001. If the current folder is numbered 999 and contains 200 pictures or a picture numbered 9999, no further pictures can be taken until the memory card is formatted ( 112) or a new memory card inserted.


The first picture displayed when pictures are played back is the picture with the highest file number in the highest-numbered folder.

Scene Mode

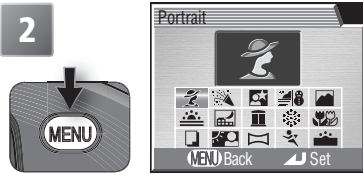
Scene mode offers a menu of fifteen “scenes,” each corresponding to a common situation, such as a backlit subject, sunset, or interior shot. Camera settings are automatically adjusted to suit the selected scene, sparing the user the necessity of adjusting each setting separately. To select a scene:

1




Select scene mode (default is .

2



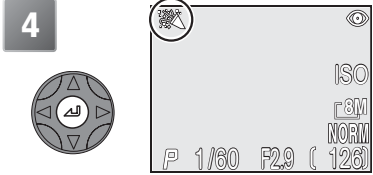
Display scene menu.

3






Highlight scene (scene can also be highlighted by rotating command dial). Highlighted scene shown by large icon and caption. To exit without changing current selection, press **MENU**.


4



Select highlighted scene and return to shooting mode. Selected scene shown by icon in monitor or electronic viewfinder.

Depending on the scene selected, restrictions may apply to flash mode (;  37) or focus mode (**AF**;  40). These restrictions are noted on the pages that follow.

Scene Mode

Depending on your subject, scene mode may not always produce the desired results. If results are not satisfactory, choose  (auto), **P**, **S**, **A**, or **M** mode and try again.

Selecting a Scene

To select a scene without leaving shooting mode, press the **FUNC** button and rotate the command dial. Selected scene is shown in control panel as **SC E 1-SC E F**.



Portrait (S C E 1)

Use for portraits. Main subject stands out clearly while background details are softened, lending composition sense of depth.

- Degree of softening depends on amount of light available.
- Focus area can be selected using multi selector (👁️ 100). If center focus area is selected, AF-assist illuminator will activate when lighting is poor.



AF

Auto



Party/Indoor (S C E 2)

Use for shots that include details of the background, or to capture the effects of candlelight and other indoor background lighting.

- Camera focuses on subject in center of frame.



AF

Auto



Hold camera steady

Night portrait (S C E 3)

Use for shots that provide natural balance between main subject and background when shooting portraits under low light.

- Noise reduction (👁️ 109) turns on automatically at slow shutter speeds.
- Focus area can be selected using multi selector (👁️ 100). If center focus area is selected, AF-assist illuminator will activate when lighting is poor.



AF

Auto



Use tripod

* Other modes can be selected.

† Auto mode can be selected.

When Lighting Is Poor

An ISO icon may be displayed when lighting is poor (👁️ 39).

Noise Reduction

Randomly-spaced, brightly-colored pixels (“noise”) tend to appear in pictures taken at slow shutter speeds. In night portrait, night landscape, and dusk/dawn modes, pictures taken at speeds slower than 1/4s are processed to reduce noise, more than doubling processing time. **NR** is displayed when noise reduction is in effect.

Camera Shake (👁️)

In some scenes, slow shutter speeds may result in blurred pictures. The precautions appropriate for avoiding blur are indicated as shown below:

Hold camera steady: Hold camera in both hands and brace elbows against body

Use tripod: Use tripod or rest camera on flat, level surface

Beach/Snow (S C E 4)

Captures the brightness of such subjects as snowfields, beaches, or sunlit expanses of water.

- Camera focuses on subject in center of frame.



Auto*

AF

Auto



—

Landscape (S C E 5)

Use for vivid landscape shots that enhance outlines, colors, and contrast in such subjects as skyscapes and forests.

- Camera focuses at infinity. Focus indicator lights whenever shutter-release button is pressed halfway.
- AF-assist illuminator will not light even when lighting is poor.



AF



—

Sunset (S C E 6)

Preserves the deep hues seen in sunsets and sunrises.

- Camera focuses on subject in center of frame.



AF


Auto

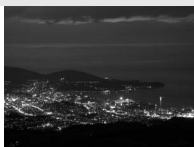


Hold camera steady

Night landscape (S C E 7)

A slow shutter speed is used to produce stunning night landscapes.

- Noise reduction ( 109) turns on automatically at slow shutter speeds.
- Camera focuses at infinity. Focus indicator lights whenever shutter-release button is pressed halfway.
- AF-assist illuminator will not light even when lighting is poor.



AF




Use tripod

* Other modes can be selected.

Museum (S C E B)

Use indoors where flash photography is prohibited (for example, in museums and art galleries) or in other settings in which you do not want to use a flash.

- The Best Shot Selector (BSS; ) turns on automatically, reducing effects of inadvertent camera movement.
- Camera focuses on subject in center of frame. AF-assist illuminator will not light even when lighting is poor. Self-timer can not be used.
- Photography may be prohibited in some settings. Obtain permission first.



AF

Auto*



Hold camera steady

Fireworks show (S C E B)

Slow shutter speeds are used to capture the expanding burst of light from a firework.

- Focus is fixed at infinity. Focus indicator lights whenever shutter-release button is pressed halfway.
- AF-assist illuminator will not light even when lighting is poor.
- Self-timer and exposure compensation can not be used.





AF



Use tripod

Close up (S C E B)

Use for close-up shots of flowers, insects, and other small objects.

- Focus area can be selected using multi selector ( 100). If center focus area is selected, AF-assist illuminator will activate when lighting is poor.
- Camera focuses continuously until shutter-release button is pressed halfway to lock focus.
- Camera zooms to macro close-up position. Macro close-up icon () turns green, indicating that camera can focus as close as 3 cm/1.2" to lens (minimum focus distance varies with zoom position). Built-in Speedlight may not light entire subject at ranges under 50 cm/1'8"; take test shot and check results.



AF



Hold camera steady

* Macro close-up mode can be selected. † Other modes can be selected.

📄 Copy (S C E b)

Provides clear pictures of text or drawings on a white board or in printed matter such as a business card.

- Camera focuses on subject in center of frame.
- Use macro close-up (📷 40) to focus at short ranges.
- Colored text and drawings may not show up well in final picture.



AF

Auto†



📷 Back light (S C E c)

Use when light is coming from behind a portrait subject, throwing their features into shadow, or when the subject is in the shade but the background is brightly lit. The built-in Speedlight fires automatically to “fill in” (illuminate) shadows.

- Camera focuses on subject in center of frame.



AF

Auto



📷 Panorama assist (S C E d; 📷 31)

Use when taking a series of pictures that will later be joined to form a single scene (for example, a panorama or 360° virtual-reality image).

- White balance and exposure are fixed at values for first shot in series. Exposure compensation, flash mode, focus mode, and zoom can not be changed after first shot.
- Camera focuses on subject in center of frame.



AF

Auto*



* Other modes can be selected.

† Macro close-up mode can be selected.

Sports (S C E E)

Fast shutter speeds freeze motion for dynamic sports shots.

- Camera focuses continuously on center of frame until shutter-release button is pressed halfway to lock focus.
- While shutter-release button is fully pressed, camera shoots at about 2.3 fps; monitor and viewfinder turn off.
- Focus, exposure, and auto white balance are determined by first shot in each series. AF-assist illuminator will not light even when lighting is poor. Self-timer can not be used.




AF

Auto*



Dusk/Dawn (S C E F)

Preserves the colors seen in the weak natural light before sunrise or after sunset.

- Noise reduction ( 109) turns on automatically at slow shutter speeds.
- Camera focuses at infinity. Focus indicator lights whenever shutter-release button is pressed halfway.
- AF-assist illuminator will not light even when lighting is poor.



AF





Hold camera steady

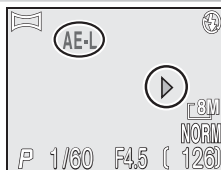
* Other modes can be selected.

Taking Pictures for a Panorama

1

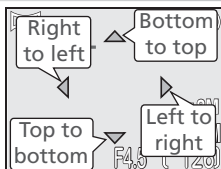
Select  (Panorama assist) in scene menu as described in steps 1–3 of “Scene Mode” ( 26).

2



Default pan direction displayed.

3



Select direction in which camera will be panned after each shot (pan direction can be changed while displayed in green). Yellow AE-L icon in monitor shows that white balance and exposure will lock with first shot.

4



Take first picture (pan icon turns white). About one third of picture is shown superimposed on view through lens (if pan direction is left to right, picture will appear at left). AE-L icon turns white to show that white balance and exposure settings for this picture apply to all pictures in series.

5



Compose next shot to overlap with previous picture.

6



Take next shot. Repeat steps 5–6 until all shots in series have been taken.

7




End series.

Panorama Assist

Pan direction, zoom, exposure compensation, image quality and size, flash mode, and focus mode can not be changed after the first picture is taken. Pictures can not be deleted until shooting is complete.

Viewing Pictures Taken Using Panorama Assist

Each series of pictures taken at **Panorama assist** is stored in a separate folder with a name consisting of "P_" preceded by a three-digit folder number and followed by a three-digit sequence number (e.g., "101P_001"). To view the pictures, select **All folders** in the playback **Folders** menu or select the appropriate folder from the folder list ( 119).

Use a Tripod

Using a tripod makes it easier to compose overlapping shots.

More on Photography

Image Mode



Pictures taken with a digital camera are stored as image files. The size of the files, and with it the number of images that can be recorded on the memory card, depends on the quality and size of the images. Before shooting, choose image quality and size according to how the picture will be used.




Image Quality

The camera stores images in one of three formats: NEF (RAW), TIFF (HI quality), or JPEG (EXTRA, FINE, NORMAL, or BASIC quality).

Option	Format	Compression ratio ¹	Description
RAW ^{2, 3}	NEF	Not compressed	Raw data from CCD are saved in Nikon Electronic Image Format (NEF) without processing or compression, preserving high level of detail at file size slightly smaller than that of TIFF images.
HI ^{2, 4}	TIFF (RGB)		High image quality (on par with NEF) in format supported by most imaging applications.
EXTRA	JPEG	1:2	Produces best quality JPEG images; file size is smaller than NEF or TIFF.
FINE		1:4	Fine image quality, suitable for enlargements or high-quality prints.
NORM (NORMAL)		1:8	Normal image quality, suited to most applications.
BASIC		1:16	Basic image quality, suitable for pictures that will be distributed by e-mail or used in web pages.

1 To reduce the amount of memory each shot occupies, JPEG images are compressed as they are saved to the memory card. Compression selectively reduces the quality of the image; the more a picture is compressed, the more noticeable this loss of quality is likely to be. This column gives the approximate compression ratio for each setting.

2 Available only in **P**, **S**, **A**, and **M** modes. Selecting  (auto) or scene mode resets image quality to EXTRA. Digital zoom ( 18) not supported.

3 Available only at an image size of . Selecting  resets image quality to HI; selecting any other size resets image quality to EXTRA. Direct print ( 80) not supported.


4 Available only at image sizes of  and . Selecting another size resets image quality to EXTRA.

Image Size

Image size refers to the dimensions of the image, measured in pixels. Pictures taken at smaller sizes require less memory, making them suited to distribution by e-mail or the web. Conversely, the larger the image, the larger the size at which it can be printed or displayed without becoming noticeably “grainy.”

Image size (pixels)	Control panel	Description (print sizes assume printer resolution of 300 dpi)
8M (3,264 × 2,448)	- 8M -	Will print at a size of about 28 × 21 cm (11" × 8").
5M (2,592 × 1,944)	- 5M -	Will print at a size of about 22 × 16 cm (8½" × 6½").
3M (2,048 × 1,536)	- 3M -	Will print at a size of about 17 × 13 cm (7" × 5").
2M (1,600 × 1,200)	- 2M -	Will print at a size of about 14 × 10 cm (5½" × 4").
1M (1,280 × 960)	- 1M -	Will print at a size of about 11 × 8 cm (4" × 3").
PC (1,024 × 768)	- PC -	Suited to printing at smaller sizes (for example, as illustration in letter or report) or to display on monitors 17" or larger. Will print at a size of about 9 × 7 (3½" × 2½").
TV (640 × 480)	- TV -	Can be displayed full screen on 13" monitors. Suited to distribution by e-mail or on web. Will print at a size of about 5 × 4 (2" × 1½").
3:2 (3,264 × 2,176)	3:2	Top and bottom of frame cropped out to produce picture of same proportions as frame of regular 35-mm film. Will print at a size of about 28 × 18 (11" × 7¼").

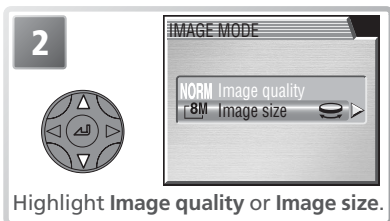
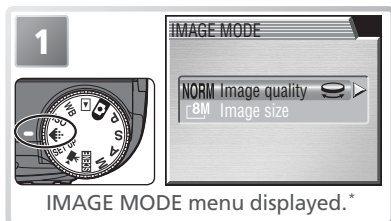
Viewing RAW (NEF) Images on a Computer

RAW (NEF) images can only be viewed using PictureProject (version 1.0.1 or later) or Nikon Capture (available separately). To create a TIFF copy for viewing in other applications, press the shutter-release button while a RAW image is displayed in full-frame playback (66). The copy will be saved under a new name with the extension .TIF.

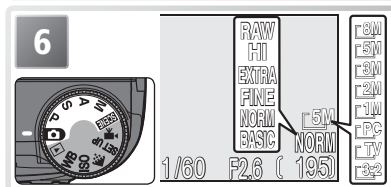
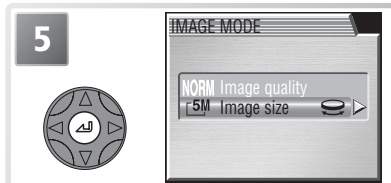
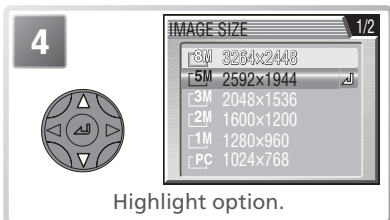
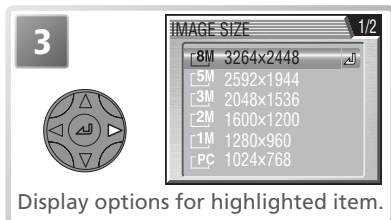
Print Size

The size of images when printed depends on the printer resolution: the higher the resolution, the smaller the final print size.

To choose image quality or size:



* In place of steps 3–5, selection can be made by highlighting **Image quality** or **Image size** and rotating command dial (⊖). Setting is displayed in control panel while command dial is rotated.



The Shooting Menu

Image quality and size can also be set using the **Image mode** option in the shooting menu (85).

Memory Card Capacity and Image Mode











The following table shows the approximate number of pictures that can be stored on a 256MB memory card at different combinations of image quality and size.

Image size	Image quality						
	RAW	HI	EXTRA	FINE	NORMAL	BASIC	
8M	20	10	30	60	125	240	No. of images
	12 MB	23 MB	7.6 MB	3.8 MB	1.9 MB	1 MB	File size
5M	—	—	50	100	195	370	No. of images
	—	—	4.8 MB	2.4 MB	1.2 MB	642 KB	File size
3M	—	—	80	155	310	600	No. of images
	—	—	3 MB	1.5 MB	793 KB	414 KB	File size
2M	—	—	130	250	485	870	No. of images
	—	—	1.8 MB	961 KB	498 KB	266 KB	File size
1M	—	—	200	390	710	1305	No. of images
	—	—	1.2 MB	627 KB	331 KB	183 KB	File size
PC	—	—	310	600	975	1565	No. of images
	—	—	793 KB	414 KB	224 KB	129 KB	File size
TV	—	—	710	1305	1955	2610	No. of images
	—	—	331 KB	183 KB	109 KB	71 KB	File size
3:2	—	10	35	70	140	275	No. of images
	—	20 MB	6.7 MB	3.4 MB	1.7 MB	891 KB	File size








* All figures are approximate. File size of JPEG images varies with scene recorded.

Flash Mode


Select a flash mode according to lighting conditions.

Mode		How it works	When to use it
Shooting display	Control panel		
Auto		If lighting is poor, built-in Speedlight pops up when shutter-release button is pressed halfway and fires when picture is taken. If left raised, flash will not fire if not required.	Recommended for most situations.
—	AUTO 		
Flash Cancel (off)		Built-in Speedlight will not fire even when lighting is poor.	Use to capture natural lighting under dim light or where use of flash is prohibited. Care should be taken to avoid blurring when lighting is poor.
			
Auto with red-eye reduction		Built-in Speedlight fires several times at low-intensity before main flash; pictures are processed to reduce red-eye if required ( 39).	Use for portraits (works best if subject looks directly at pre-flash). Not recommended when quick shutter response is required.
	AUTO 		
Anytime Flash (fill flash)		Built-in Speedlight fires whenever picture is taken.	Use to “fill-in” (illuminate) shadows and back-lit subjects.
			
Slow sync		Auto flash combined with slow shutter speeds.	Use to capture both subject and background at night or under dim light. Care should be taken to avoid blurring when lighting is poor.
	AUTO 		
Rear curtain sync		Shutter speed slows; built-in Speedlight fires just before shutter closes.	Creates stream of light trailing moving objects. Care should be taken to avoid blurring when lighting is poor.
	AUTO 		

Auto Flash Off

The built-in Speedlight turns off automatically when focus is set to infinity ( 40), an option other than **Time-lapse movie** is selected in movie mode ( 58), an option other than **Single** or **Intvl timer shooting** is selected for **Continuous** ( 88), **BSS** ( 91) is active, a setting other than **Normal** is selected for **Lens** ( 97), **AE lock** ( 98) is on, or **Internal off** is selected for **Speedlight opt. > Speedlight cntrl** ( 105).

Using the Built-in Speedlight

When **Auto** (the default option) is selected for **Speedlight opt.** > **Pop up**  104, the built-in Speedlight will pop up automatically when required. Do not place your fingers or other objects on top of the Speedlight while shooting. If the Speedlight is held down when the shutter-release button is pressed halfway, a message will be displayed. Pictures can still be taken, but neither the built-in Speedlight nor optional Speedlights will fire.




Light from the flash reflected from particles of dust or other matter in the air may appear in pictures as bright specks. If this occurs, turn the flash off or zoom in and try again.



Keep your fingers and other objects away from the flash window when the built-in Speedlight is raised.

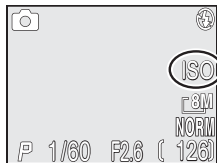
Lens Hoods

Remove lens hoods (available separately;  143) when using the flash.

When Lighting Is Poor

When lighting is poor and the flash is off  or set to slow sync , shutter speed slows and pictures may be blurred. At speeds slower than $\frac{1}{4}$ s, the shutter-speed indicator in the monitor or electronic viewfinder will turn yellow to indicate that dark areas of the image may be slightly mottled. Mottling can be reduced by turning noise reduction on  109. At speeds slower than $\frac{1}{30}$ s, we recommend using a tripod or resting the camera on a steady, level surface.


In  (auto) or scene modes, or when sensitivity  51) is set to AUTO in **P**, **S**, **A**, or **M** modes, the camera will automatically increase sensitivity in response to lighting conditions, permitting faster exposures and minimizing blur caused by inadvertent camera movement (camera shake). An **ISO** icon will be displayed to warn that pictures may be slightly mottled.



Red-Eye Reduction

If the camera detects red-eye after the pre-flash has fired, advanced red-eye reduction processing is used to further reduce red-eye, slightly increasing the time required before the next picture can be taken. In extremely rare cases, portions of the image outside the area of red-eye may be affected; if this occurs, change the flash setting and try again.

Optional Speedlights

Optional Speedlights can be mounted on the camera's accessory shoe  104).

Speedlight Options 104

The **Speedlight opt.** item in the shooting menu contains options controlling the built-in and optional Speedlights.



Focus Mode

Choose a focus mode according to the subject and composition.

Mode	How it works	When to use it
NO ICON Autofocus	Camera automatically adjusts focus according to distance to subject.	Use when subject is 50 cm (1'8") or more from lens.
 Infinity	Camera focuses at infinity; focus indicator lights whenever shutter-release button is pressed halfway. Flash is disabled.	Use when shooting distant scenes through foreground objects such as windows.
 Macro close-up	If zoomed in or out until in the shooting display turns green, camera can focus on objects as close as 3 cm (1.2") to lens.	Use for close-ups.

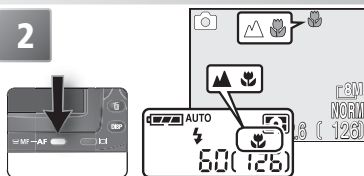
To choose a focus mode:

1



Rotate mode dial to , **SCENE**, P, S, A, M, or (time-lapse movie only). Note that depending on scene selected, restrictions may apply to focus mode selection in **SCENE** mode (26).

2



Press MF-AF button to cycle through focus mode settings in order listed above (note that no icon appears in autofocus mode).

Manual Focus

For information on manual focus, see "Manual Focus" (56).



Self-Timer and Remote Control Photography

The self-timer and ML-L3 remote control (supplied; 42) can be used for self-portraits or to avoid blurring that may result from the camera moving when the shutter-release button is pressed.

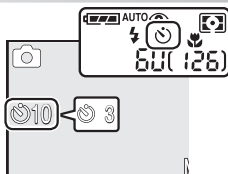
Using the Self-Timer

1



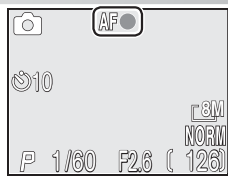
Rotate mode dial to **SCENE**, P, S, A, or M. Note that depending on scene selected, self-timer may not be available in **SCENE** mode (26).

2



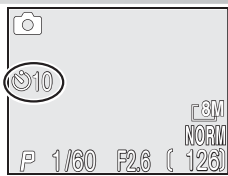
Select self-timer mode. Press () button once for 10s timer, twice for 3s timer, three times to cancel timer.

3

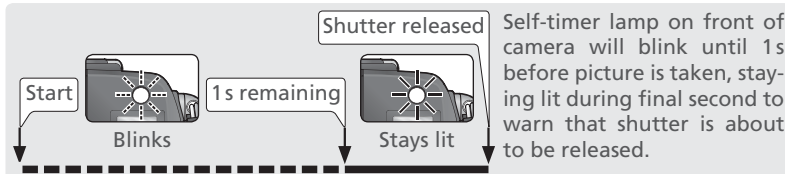


Set focus and exposure.

4






Start timer. Beep sounds when timer starts; timer in shooting display counts down until shutter is released. To stop timer before picture is taken, press () button or press shutter-release button again.



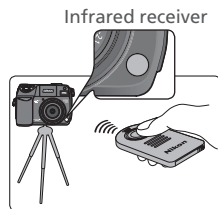
Using the ML-L3 Remote Control

To use the ML-L3 remote control:

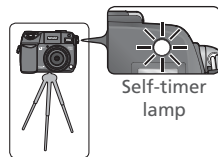
- 1 Mount the camera on a tripod (recommended) or place it on a stable, level surface.
- 2 Press the   button to select self-timer mode ( 41).
- 3 After framing the photograph, aim the remote control transmitter at the camera infrared receiver and press the shutter release on the remote control.

Using the Remote Control








The ML-L3 has a range of about 5 m (16'). Be sure the line of sight between the remote and the infrared receiver is not blocked by converter lenses, lens hoods, or other obstacles. Note that the remote may not function if the receiver is too brightly lit.



- 4 The camera will take a picture about two seconds later. The self-timer lamp will blink for the first second and then remain lit until the shutter is released. Self-timer mode remains in effect after the shutter is released, allowing additional pictures to be taken using the remote.

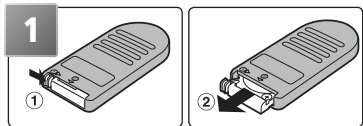


The Self-Timer

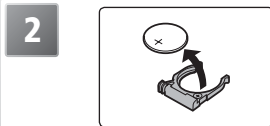
When the self-timer is turned on, BSS turns off automatically ( 91). If an option other than **Intvl timer shooting** is selected for **Continuous** ( 88), **Continuous** will automatically be reset to **Single**. The self-timer is not available in movie mode ( 58), or when  (Museum),  (Fireworks show), or  (Sports) is selected in scene mode ( 26).

Using the ML-L3: Replacing the Battery

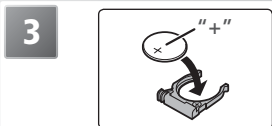
The ML-L3 remote control is powered by a three-volt CR2025 lithium battery. To replace the battery:



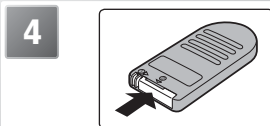
Unlatch (1) and remove (2) battery holder.



Remove used battery.



Insert fresh battery with face marked "+" on top.



Slide holder into remote until latch clicks into place.

✓ Keep out of Reach of Children

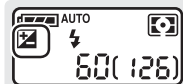
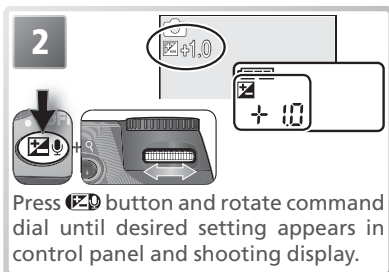
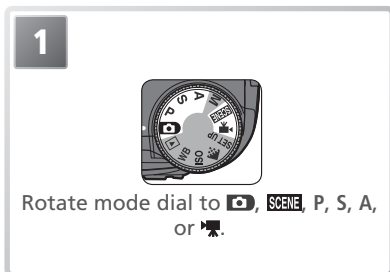
Care should be taken to prevent infants from putting the battery and small parts in their mouths. Should the battery be swallowed, contact a physician immediately.

✍ The ML-L3 Remote Control

Before using the remote control for the first time, remove the clear plastic battery insulator sheet. Place the remote control in the supplied carrying case when not in use.




Exposure Compensation

Exposure compensation is used to alter exposure from the value suggested by the camera. Exposure compensation can be set to values between -2.0EV (underexposure) and $+2.0\text{EV}$ (overexposure) in increments of $\frac{1}{3}\text{EV}$.





At settings other than 0.0,  icon is displayed in control panel after  button is released.

Restrictions on Exposure Compensation

Exposure compensation is not available in mode **M** () 45) or when  (Fireworks show) is selected in scene mode () 26).






Cancelling Exposure Compensation

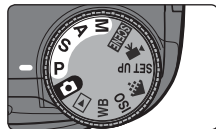
To cancel exposure compensation, choose a value of 0.0. In , **SCENE**, and  modes, exposure compensation is also reset to 0.0 when the mode dial is rotated to another setting.

Choosing a Value for Exposure Compensation

As a rule of thumb, select *positive* values when large areas of the frame are very brightly lit (for example, when photographing an expanse of sunlit water, sand, or snow) or when the background is much brighter than the main subject. Choose *negative* values when large areas of the frame are very dark (for example, when photographing a forest of dark green leaves) or when the background is much darker than the main subject. This is because the camera, in order to avoid extreme under- or over-exposure, tends to lower exposure when the frame is very bright and raise exposure when the frame is very dark, which can make naturally bright subjects look dim and naturally dark subjects appear over-bright, or “washed out.”

PSAM Controlling Exposure: P, S, A, and M Modes

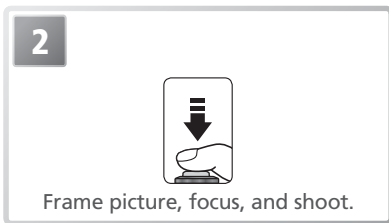
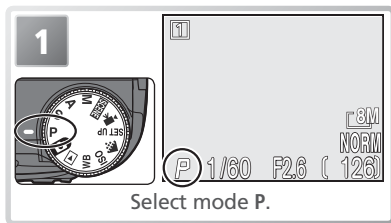
In  (auto) and scene modes, the camera automatically adjusts shutter speed and aperture to produce optimal exposure. In **P**, **S**, **A**, and **M** modes, shutter speed and aperture can be adjusted to suit the user's creative intent. **P**, **S**, **A**, and **M** modes also give the user control over sensitivity (ISO equivalency;  51), white balance ( 53), manual focus ( 56), and the options in the shooting menu ( 85).



Mode	How it works	When to use it
P Programmed auto	Camera sets shutter speed and aperture for optimal exposure. Flexible program can be used to select additional combinations of shutter speed and aperture that will produce the same exposure.	Recommended for most situations.
S Shutter- priority auto	User chooses shutter speed: camera sets aperture for best results.	High shutter speeds freeze motion. Low shutter speeds suggest movement by blurring moving objects.
A Aperture- priority auto	User chooses aperture: camera sets shutter speed for best results.	Large apertures (small f/-numbers) soften background details and let more light into camera, increasing range of flash. Small apertures (large f/-numbers) increase depth of field, bringing main subject and background into focus.
M Manual	User controls both shutter speed and aperture.	Use for complete control over exposure.

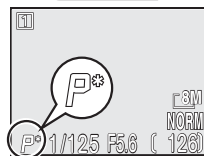
P: Programmed Auto

In programmed auto, the camera automatically adjusts shutter speed and aperture according to the amount of light available, producing optimal exposure in most situations. Adjustments to exposure can be made using exposure compensation (📷 44) or exposure bracketing (📷 107).



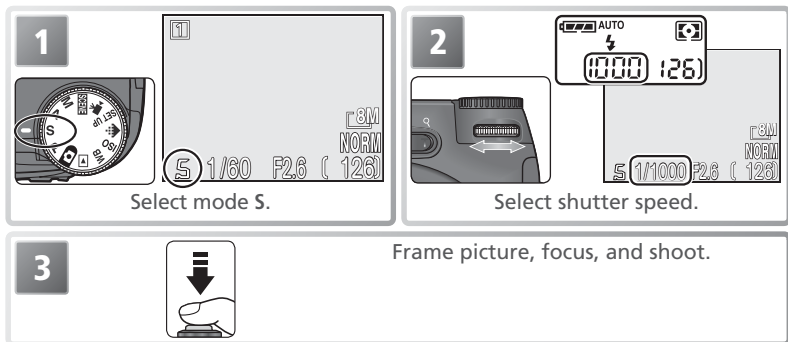
📷 Flexible Program

In mode **P**, different combinations of shutter speed and aperture can be selected by rotating the command dial (“flexible program”). All combinations produce the same exposure (the control panel shutter speed/aperture display shows either shutter speed or aperture; press the **FUNC** button to switch from one to the other). While flexible program is in effect, an asterisk (“*”) appears next to the exposure mode indicator in the shooting display. To restore the default shutter speed and aperture, rotate the command dial in the other direction until the asterisk is no longer displayed. Default values can also be restored by selecting another mode or turning the camera off.



S: Shutter-Priority Auto

In shutter-priority auto, the user selects the shutter speed by rotating the command dial; aperture is set automatically by the camera in response to lighting conditions. Shutter speed can be set to values between 8 s and $\frac{1}{3,000}$ s in increments equivalent to 1 EV (one step).



If the selected shutter speed would result in the picture being under- or over-exposed, the shutter-speed display in the monitor or electronic viewfinder will flash when the shutter-release button is pressed halfway. Choose another shutter speed and try again. At speeds slower than $\frac{1}{4}$ s, the shutter-speed indicator in the shooting display will turn yellow to show that mottling may appear in the final picture. If possible, choose a faster shutter speed or use noise reduction (109).

Ultra HS

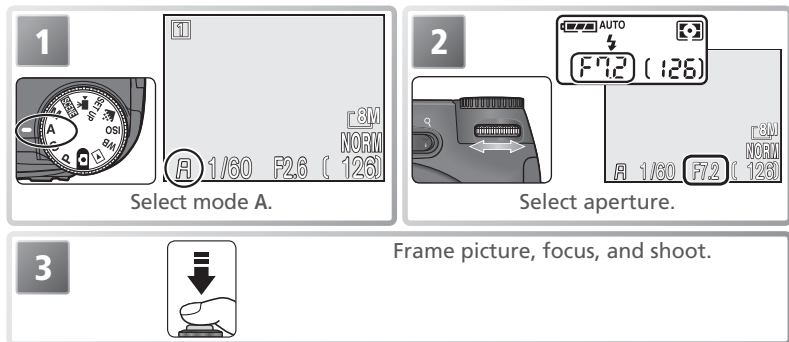
When **Ultra HS** is selected for **Continuous** (88), the frame advance rate is fixed at thirty frames per second, with the result that the shutter speed can not be set to a value slower than $\frac{1}{30}$ s.

Aperture Restrictions

At a shutter speed of $\frac{1}{3,000}$ s, aperture is restricted to f/7.7 (maximum zoom) or to values between f/4.5 and f/7.2 (camera zoomed out to widest angle).

A: Aperture-Priority Auto

In aperture-priority auto, aperture is controlled by rotating the command dial; shutter speed is set automatically by the camera in response to lighting conditions. Aperture varies in increments equivalent to $\frac{1}{3}$ EV ($\frac{1}{3}$ step); depending on the zoom position, the camera can achieve apertures as large as f/2.6 or as small as f/7.9.



If the selected aperture would result in the picture being under- or over-exposed, the aperture display in the monitor or electronic viewfinder will flash when the shutter-release button is pressed halfway. Choose another aperture and try again.

An aperture of f/7.9 may not be available at some zoom positions. For smaller apertures, try zooming the camera out.

Aperture and Zoom

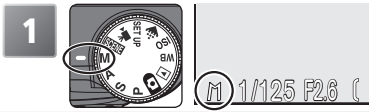
The maximum and minimum values for aperture are determined by the camera lens and zoom setting. Unless **On** is chosen for **Zoom options > Fixed aperture** (103), aperture will change as the camera is zoomed in or out. If the second-highest aperture setting is selected with the camera zoomed all the way out and the camera is then zoomed in, the camera will vary the f-number to maintain aperture at the second-highest setting for the current zoom position.

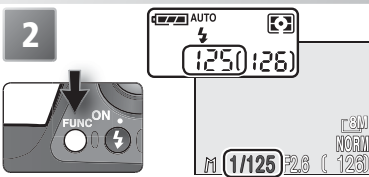
Faster Shutter Speeds

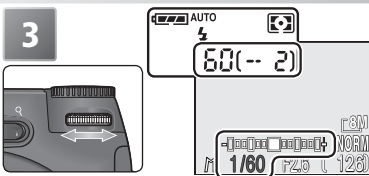
Depending on the amount of light available, it may be possible to achieve shutter speeds as high as $\frac{1}{3,000}$ s by selecting an aperture of f/7.7 (maximum zoom) or between f/4.5 and f/7.2 (widest angle).

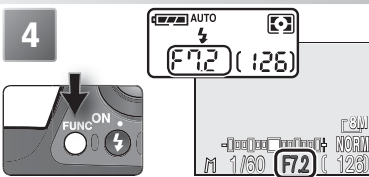
M: Manual


In manual exposure mode, the user controls both shutter speed and aperture. Shutter speed can be set to values between 8s and $\frac{1}{3,000}$ s in increments equivalent to 1 EV (one step), or the shutter can be held open for long time exposures of up to ten minutes (⏏ 50). Aperture can set to values between the minimum and maximum in increments equivalent to $\frac{1}{3}$ EV ($\frac{1}{3}$ step).

- 

1 Select mode M.
- 

2 Select shutter speed or aperture. Selected item changes each time FUNC button is pressed (selected item highlighted in green in shooting display; shutter speeds slower than $\frac{1}{4}$ s displayed in yellow).
- 

3 Set selected item. Exposure displays show amount picture will be under- or over-exposed at current setting.
- 

4 Select remaining item (aperture or shutter speed). Repeat steps 3–4 until desired exposure is achieved. Note that when shutter speed is set to $\frac{1}{3,000}$ s, aperture is restricted to f/7.7 (maximum zoom) or f/4.5–f/7.2 (widest angle).
- 

5 Frame picture, focus, and shoot.

Slow Shutter Speeds

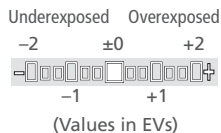
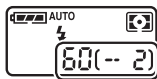
Use of a tripod is recommended at slow shutter speeds to prevent blurring.

Understanding the Exposure Displays



The exposure displays show the amount pictures will be under- or over-exposed at the values currently selected for shutter speed and aperture.

The control panel display is in EVs, rounded to the nearest EV. If the picture would be under- over-exposed by more than 9EV, the display will show a flashing -9 (underexposure) or +9 (overexposure). If no operations are performed for about eight seconds, the display in the control panel will be replaced by the number of exposures remaining.

The exposure display in the monitor or electronic viewfinder shows the amount exposure deviates from the value suggested by the camera in EVs (-2 to +2EV in increments of 1/3EV).




Long Time Exposures

For long time exposures of up to ten minutes, set **Continuous** ( 88) to **Single** and rotate the command dial to select a shutter speed of BULB or TIME. The length of time the shutter will remain open depends on the option selected for **Exposure options > Bulb/Time** ( 99):

- **Bulb release:** When BULB is selected for shutter speed, the shutter will remain open for as long as the shutter-release button is held down, to a maximum of ten minutes.
- **Timed release:** When TIME is selected for shutter speed, the shutter will open when the shutter-release button is pressed and remain open until the shutter-release button is pressed again or the time selected in the **Timed release** menu has elapsed.



To prevent blurring caused by camera shake, turn the self timer on and use the ML-L3 wireless remote ( 42). When BULB or TIME is selected for shutter speed, the shutter will open when the remote control shutter-release button is pressed and remain open until the shutter-release button is pressed again or the specified time has elapsed (ten minutes at a shutter speed of BULB).

To reduce mottling in long time exposures, use noise reduction ( 109).

ISO Sensitivity

P, S, A, and M Modes Only

Sensitivity (ISO equivalency) is the digital equivalent of film speed. The higher the sensitivity, the less light needed to make an exposure, allowing higher shutter speeds and smaller apertures. Much as film with a high ISO rating tends to produce “grainy” images, high sensitivities may be associated with “noise”—randomly spaced, brightly colored pixels concentrated in dark parts of the image. Noise reduction (🔇 109) can be used to reduce noise in pictures taken at shutter speeds of slower than $\frac{1}{4}$ s.

In 📷 (auto) and scene modes, the camera automatically raises sensitivity when lighting is poor. In **P**, **S**, **A**, and **M** modes, the following options are available:

Option	Description
50	Approximately equivalent to ISO 50. Recommended unless lighting is poor or faster shutter speeds are required (e.g., when subject is moving). Noise may appear in pictures taken at settings above this value.
100	Approximately equivalent to ISO 100.
200	Approximately equivalent to ISO 200.
400	Approximately equivalent to ISO 400.
Auto	Approximately equivalent to ISO 50 under normal conditions; when lighting is poor, however, camera automatically compensates by raising sensitivity to maximum of ISO 200 equivalent). ISO icon appears in control panel and shooting display when sensitivity is raised.

To choose a value for sensitivity:



* In place of steps 2–4, selection can be made by rotating command dial (🌀). Setting is displayed in control panel while command dial is rotated.

3



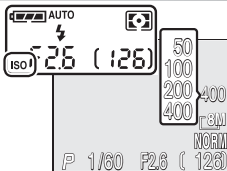
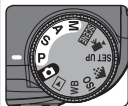
Highlight option.

4



Make selection.

5



Rotate mode dial to P, S, A, or M. At settings other than **Auto**, current setting is shown in shooting display and ISO icon appears in control panel.

Exposure Mode

If **Auto** is selected in mode **S** or **M**, **AUTO** will appear in the photo information display but sensitivity will be fixed at ISO 50 equivalent and will not vary with lighting conditions.

Using the Flash

A setting of **400** is intended for use with natural lighting. Choose **Auto**, **50**, **100**, or **200** when using the flash.


The Shooting Menu







Sensitivity can also be set using the **Sensitivity** option in the shooting menu ( 85).

WB White Balance

P, S, A, and M Modes Only


The color of the light reflected from an object varies with the color of the light source. The human brain is able to adapt to such changes in color, with the result that we see white objects as white, regardless of whether they are in the shade, direct sunlight, or under incandescent lighting. Digital cameras can mimic this adjustment by processing pictures according to the color of the light source. This process is known as a “white balance adjustment.”

In  and scene modes, white balance is adjusted automatically. In **P**, **S**, **A**, and **M** modes, white balance can be selected from the following options:

Option	Description
A-WB Auto	White balance automatically adjusted to suit lighting conditions. Recommended for most situations.
PRE White bal. preset	White object used as reference to set white balance under unusual lighting conditions.
 Daylight	White balance adjusted for direct sunlight.
 Incandescent	Use under incandescent lighting.
 Fluorescent	Use under most types of fluorescent lighting.
 Cloudy	Use when taking pictures under overcast skies.
 Speedlight	Use with built-in Speedlight.
 Shade	Use under sunny skies when subject is in shade.

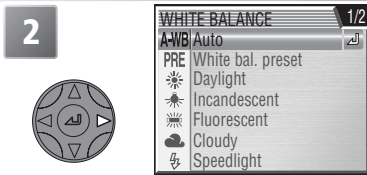
To choose a white balance setting:

1




WHITE BALANCE menu displayed.*

2



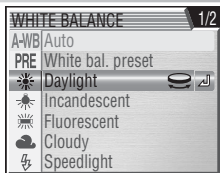
Display options.

* In place of steps 2–4, selection can be made by rotating command dial (). Setting is displayed in control panel while command dial is rotated.

The Shooting Menu

White balance can also be set using the **White balance** option in the shooting menu ( 85).

3



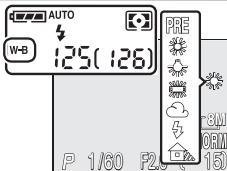
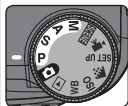
Highlight option.

4



Make selection.

5



Rotate mode dial to P, S, A, or M. At settings other than **Auto**, current setting is shown in shooting display and W-B icon appears in control panel.

Fine-Tuning White Balance

At settings other than **A-WB (Auto)** and **PRE (White bal. preset)**, white balance can be “fine tuned” to compensate for variations in the color of the light source or to create pictures with a “warm” or “cold” cast. Except in the case of **Fluorescent**, adjustments can be made in the range +3 to -3 in increments of one. Higher settings can be used to lend images a bluish tinge or to compensate for light sources with a yellow or red cast. Lower settings can be used to make pictures slightly yellow or red or to compensate for light sources with a blue cast.

When white balance is set to **Fluorescent**, a menu of three different bulb types is available.

To fine-tune white balance, display the white balance menu and highlight an option as described above, then follow the steps below:

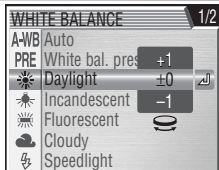
Option	Bulb type
FL1	White (W)
FL2	Daylight White/Neutral (N)
FL3	Daylight (D)

1



Choose value for fine tuning.

2



Make selection.

PRE Preset White Balance

Preset white balance is used when shooting under mixed lighting or to compensate for light sources with a strong color cast (for example, to make pictures taken under a lamp with a red shade look as though they had been taken under white light). When **PRE (White bal. preset)** is selected from the white-balance menu, the camera will zoom in and the menu shown above at right will be displayed.





Option	Description
Cancel	Recalls the most recent value for preset white balance from memory and sets white balance to this value.
Measure	To measure a new value for white balance, place a white object, such as a piece of paper, under the lighting that will be used in the final picture. Frame this object so that it fills the square in the center of the menu shown above. Highlight Measure and press the center of the multi selector to measure a new value for white balance (the shutter will be released and the camera will return to the original zoom position, but no picture will be recorded).

Using the Flash

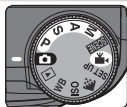
Preset white balance can not be measured with the flash.


MF Manual Focus

P, S, A, M, and  Modes Only

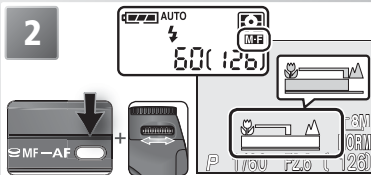
Manual focus is available in **P**, **S**, **A**, **M**, and  modes for situations in which the desired results can not be achieved using autofocus. Focus distance can be selected from preset values ranging from 3 cm/1" (widest angle) or 20 cm/8" (maximum zoom) to infinity.

1




Rotate mode dial to **P**, **S**, **A**, **M**, or .

2



Press **MF-AF** button and rotate command dial until subject is in focus. Focus position (distance from lens) shown by manual focus display in monitor or electronic viewfinder. **MF** icon displayed in control panel.

3

Confirm focus in shooting display. Unless **Off** is selected for **Focus options > Focus confirmation** ( 102), focus confirmation turns on automatically when manual focus is in effect, and objects that are in focus will be sharply outlined.

4




Take pictures.

Cancelling Manual Focus

To cancel manual focus, press the **MF-AF** button.

Manual Focus

When manual focus is in the macro close-up range (the  end of the manual focus display), the manual focus display will turn green and the camera will be able to focus on subjects as close as 3 cm (1"). Note that minimum focus distance varies with zoom position; at some positions, the camera may be unable to focus in the macro close-up range. If the camera is unable to focus at the current zoom position, the manual focus display will turn red.

The **AE/AF-L** button can not be used to lock focus in manual focus mode.

Use autofocus with optional converter lenses ( 97).

Image Adjustment

P, S, A, and M Modes Only

The shooting menu (📷 85) includes options for controlling sharpness, contrast, and color saturation. These settings, which are available only in **P**, **S**, **A**, and **M** modes, can be adjusted according to shooting conditions and the user's creative intent.



Image Adjustment (📷 93)

Adjust contrast according to the scene and how the picture will be used.



Saturation Control (📷 94)

Take pictures in black-and-white, or adjust vividness for printing or for retouching in an imaging application.



Image Sharpening (📷 96)

Sharpen or soften outlines.

Keep or Delete (Quick Delete)

While pictures are being recorded at an image quality of HI or at a **Continuous** setting of **Ultra HS** (📷 88), a 🗑️→DELETE (quick delete) icon will be displayed in shooting display. To delete pictures before they are recorded to the memory card, press the 🗑️ button. A confirmation dialog will be displayed; press the multi selector up or down to highlight an option and then press the center of the multi selector to make a selection.

- **Yes:** Delete the picture and return to shooting mode
- **No:** Exit to shooting mode without deleting the picture





Erase 1 Image (s)?

No
Yes

Movies

Movie Mode

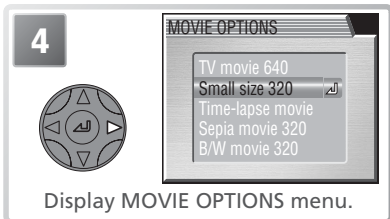
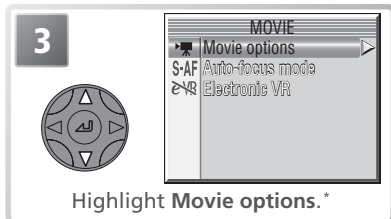
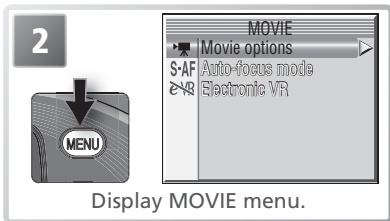
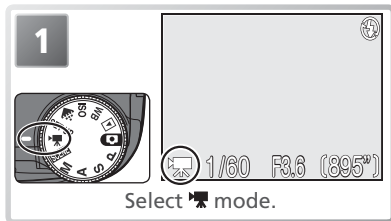
In  mode, the camera can record the following types of movie. All except time-lapse movies include sound recorded via the built-in microphone.

Option	Description	Max. length*
TV movie 640	Record color movies up to 60s long at frame rate of 30fps. Each frame is 640×480 pixels in size.	60s
Small movie 320	Record color movies at 15fps and frame size of 320×240.	895s†
Time-lapse movie	Camera takes up to 1050 stills at specified intervals and joins them to create silent movie with frame rate of 30fps and frame size of 640×480 ( 62). Shoot flowers opening, butterfly emerging from cocoon, etc.	35s (1050 frames)
Sepia movie 320	Record sepia movies at 5fps and frame size of 320×240.	895s†
B/W movie 320	Record black-and-white movies at 15fps and frame size of 320×240.	895s†

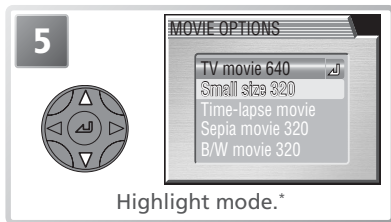
* Approximate maximum total length (256MB card); may vary with make of card.

† Shooting can continue to maximum of 2400s if sufficient memory is available.

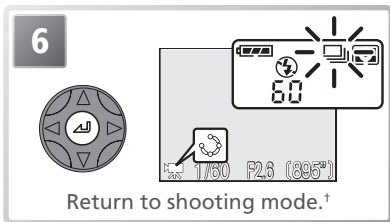
To choose the type of movie that will be recorded:



* For information on **Auto-focus mode**, see page 59. See page 60 for information on **Electronic VR**.



* To exit without changing mode, press button.

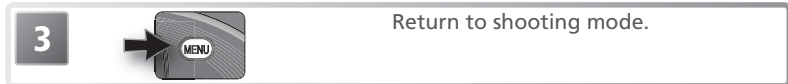
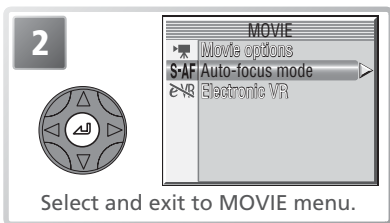
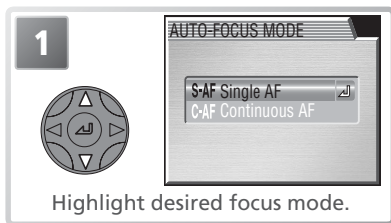


† If **Time lapse movie** is selected, time-lapse-movie menu is displayed (62).

The following options are available for **Auto-focus mode** (see page 101 for information on the autofocus options available for still pictures):

Option	Description
Single AF (default)	Camera focuses when shutter-release button is pressed halfway. Focus locks when focus operation is complete.
Continuous AF	Camera adjusts focus continuously.

To choose a focus option, highlight **Auto-focus mode** in the MOVIE menu (58) and press the multi selector to the right. The menu shown in Step 1 will be displayed.



Autofocus Mode

Select **Single AF** if the sound of the camera focusing interferes with recording.

Selecting a Movie Mode

To select a movie mode without leaving shooting mode, press the **FUNC** button and rotate the command dial.




The following options are available for **Electronic VR**:

Option	Description
On	Reduces effects of camera shake (not available with time-lapse movies).
Off	Vibration reduction off.

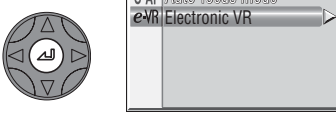
To choose a vibration reduction option, highlight **Electronic VR** in the MOVIE menu (📷 58) and press the multi selector to the right. The menu shown in Step 1 will be displayed.

1




Highlight option.

2



Select and exit to MOVIE menu.

3

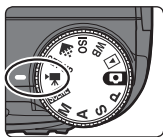


Return to shooting mode.

📷 Movie Files

Movies are recorded as QuickTime movie files with the extension “.MOV” and names consisting of “INTN” (time-lapse movies) or “DSCN” (other movies) plus a four-digit file number assigned by adding one to the highest file number in the current folder (e.g., “INTN0001.MOV” or “DSCN0015.MOV”). Movies can be played back on a computer after transfer.

Recording Movies



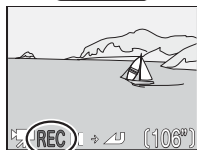
1 Rotate the mode dial to and turn the camera on

The exposure count display in the monitor shows the maximum total length of the movie that can be recorded.



2 Start recording

Press the shutter-release button all the way down to start recording.




While recording is in progress, a **REC** indicator will be displayed. To pause recording, press the center of the multi selector. Recording will resume when the center of the multi selector is pressed again.



3 End recording

Press the shutter-release button all the way down a second time to end recording. Recording will end automatically when the movie has reached maximum length or the memory card is full.


TV, Small, Sepia, and Black-and-White Movies

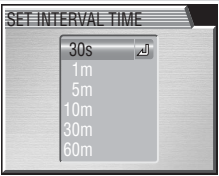
The Speedlight turns off when **TV movie 640**, **Small movie 320**, **Sepia movie 320**, or **B/W movie 320** is selected. Optical zoom can not be adjusted during recording. Digital zoom (maximum 2x) can be used at any time, both before and during recording, even if **Off** is selected for **Zoom options > Digital tele**  (103).

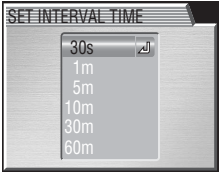
Do not touch the built-in microphone during recording.


Recording a Time-Lapse Movie


Selecting **Time-lapse movie** from the MOVIE menu (📷 58) displays the menu shown in Step 1, below.


- 

1 Highlight **Set interval time**.
- 

2 Display menu of interval options.
- 

3 Choose interval between frames from **30s** (thirty seconds), **1m** (one minute), **5m** (five minutes), **10m** (ten minutes), **30m** (thirty minutes), and **60m** (sixty minutes).
- 

4 Make selection and return to shooting mode. To change AE lock option, press **MENU** button and select **Movie options > Time-lapse movie**. To record movie without changing AE lock option, proceed to Step 8.
- 

5 Highlight **AE lock**.
- 

6 Display **AE LOCK** menu.

📷 Take a Test Shot

Take a test shot and view the results before beginning recording.

7



Choose **On** to fix exposure and auto white balance for entire movie at values for first frame, **Off** to meter new values for exposure and white balance with each shot. Press center of multi selector to return to shooting mode.

8



Start recording. Camera will take pictures at specified interval until shutter-release button is pressed again, memory card is full, or 1050 frames have been recorded.

Use a Reliable Power Source

If possible, use the optional EH-54 AC adapter when recording time-lapse movies.

During Recording

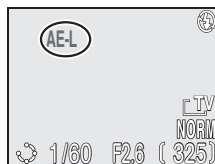
To save power, the monitor and electronic viewfinder turn off between frames. The display turns on automatically immediately before the camera takes the next shot.

Image Quality



The file size of time lapse movies varies greatly depending on the option selected for image quality. If HI or RAW is selected, image quality will automatically be set to EXTRA. Movies recorded at settings of EXTRA, FINE, and NORMAL may seem slightly jerky when viewed on the camera but will play back normally when displayed on a computer.

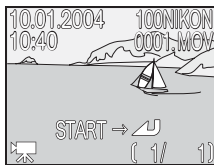
AE Lock











When **On** is selected for **AE lock**, a yellow AE-L icon will be displayed, indicating that exposure and white balance will be locked with the first shot. Once the first shot is taken, the icon will turn white.



Viewing Movies

To play a movie back, rotate the mode dial to  and display the movie in full-frame playback (movie files are indicated by a  icon). Press the center of the multi selector to begin playback. If the movie was recorded with the **TV movie 640**, **Small movie 320**, **Sepia movie 320**, or **B/W movie 320** option, sound recorded with the movie will be played back over the camera's built-in speaker.



To	Press	Description
Start/pause/resume playback		Press center of multi selector to start playback. While playback is in progress, pressing center of multi selector pauses playback. Press again to resume. When movie ends, first frame of movie will be displayed.
Rewind/Jog rewind		Press multi selector up or left to rewind. If movie is paused, movie will be rewound one frame each time multi selector is pressed.
Fast forward/Jog advance		Press multi selector down or right to fast forward. If movie is paused, movie will advance one frame each time multi selector is pressed.
End playback		Press QUICK button to end playback.
Raise volume		Volume indicator displayed in monitor when zoom buttons are pressed. Four levels are available: high () , medium () ,
Lower volume		low () , and mute () .

Quick Review/Full-Screen Review

Movies can not be played back in quick review or full-screen review ( 23).


Direct Print

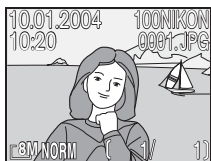
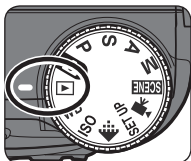
Movies can not be printed via direct USB connection ( 80).


More on Playback

▶ Viewing Pictures on the Camera

Full-Frame Playback

To view the pictures on the memory card full-frame in the monitor or electronic viewfinder (full-frame playback), rotate the mode dial to .



Pressing the center of the multi selector in full-frame playback or full-screen review magnifies the current picture about 3× ( 24).

Viewing Additional Pictures

Press the multi selector down or right to view pictures in the order recorded, up or left to view pictures in reverse order. Keep the multi selector pressed to scroll rapidly to the desired frame number.

Quick Edit


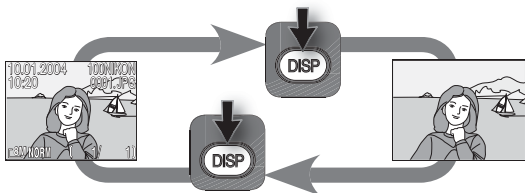
To create a copy of the current picture at a different size or with enhanced brightness and contrast, press the shutter-release button ( 72).


Photo Information

Press the  button to hide or view photo information.

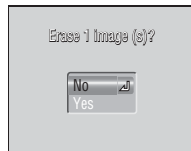


Battery indicator is displayed when battery is low, even when photo information is hidden.

Deleting the Current Picture

To delete the current picture, press the  button. A confirmation dialog will be displayed; press the multi selector up or down to highlight an option and then press the center of the multi selector to make a selection.


- **Yes:** Delete the picture and return to playback mode
- **No:** Exit to playback mode without deleting the picture



Quick Review/Full-Screen Review

To view pictures without leaving shooting mode, press the  button ( 23).

Creating HI-Quality Copies of RAW Images (Full-Frame Playback)

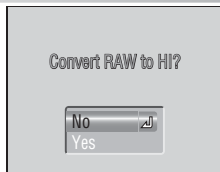
HI-quality (TIFF) copies can be created from RAW-quality images, allowing the pictures to be viewed in any application that supports TIFF. The copy will be named by adding one to the highest file number in the current folder, with ".TIF" in place of the extension ".NEF" (e.g., "DSCN0002.TIF"). To create a copy, rotate the mode dial to  and follow the steps below.

1



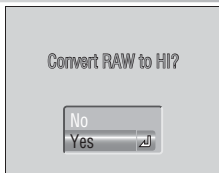
Display RAW-quality original.

2



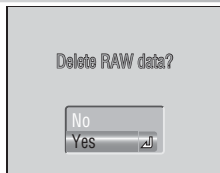
Confirmation dialog displayed.

3




Highlight **Yes**.*

4

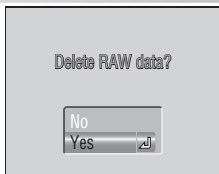


Create HI-quality copy.†

* To exit without creating copy, highlight **No** and press center of multi selector.

†  icon displayed during copying. Wait until copying is complete.

5






Highlight option.

- **No**: exit without deleting original
 - **Yes**: delete original
- Press center of multi selector to select highlighted option and return to full-frame playback.

Creating HI-Quality Copies

Before creating a copy, switch to shooting mode, select HI image quality, and check the number of exposures remaining to confirm that there is space on the memory card for at least one additional HI-quality image.

Viewing Multiple Pictures: Thumbnail Playback

Pressing the  (W) button in full-screen review ( 23) or full-frame playback ( 65) displays the pictures on the memory card in “contact sheets” of four thumbnail images. The following operations can be performed while thumbnails are displayed:
















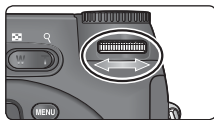
To	Use	Description
Highlight pictures		Press multi selector up, down, left, or right to highlight pictures.
Page through pictures		Rotate the command dial to scroll through thumbnails a page at a time.
Change number of pictures displayed	 (W) / Q (T)	With four thumbnails displayed, press  (W) button once to view nine thumbnails. Press Q (T) to “zoom in” from nine- to four-thumbnail view or, when four thumbnails are displayed, to view highlighted picture full frame.
Delete highlighted picture		Confirmation dialog will be displayed. Press multi selector up or down to highlight option, press center to select. <ul style="list-style-type: none"> • Select Yes to delete picture • Select No to exit without deleting picture 
View highlighted picture full frame		View picture highlighted in thumbnail list full frame.
Exit to current mode		Return to full-frame playback with highlighted picture displayed full frame (full-frame playback) or return to shooting mode (full-screen review;  23).
Perform quick edit	 Shutter button	Create copy of highlighted picture at new size ( 72) or with enhanced brightness and contrast ( 73). Not available in full-screen review ( 23).

Photo Information

In full-screen review (📷 23) and full-frame playback (📷 65), information about each picture is superimposed on the image. There are six pages of photo information for each picture. Rotate the command dial to cycle through photo information as follows: Page 1 ↔ Page 2 ↔ Page 3 ↔ Page 4 ↔ Page 5 ↔ Page 6 ↔ Page 1.



Page 1 (File Information)



- 1 Date of recording
- 2 Time of recording
- 3 Image size
- 4 Folder
- 5 File number and type
- 6 Battery level indicator
- 7 Voice memo icon
- 8 Transfer icon
- 9 Print-order icon
- 10 Protect icon
- 11 Current frame number/ total number of frames visible in current folder
- 12 Image quality

Page 2 (Shooting Information)



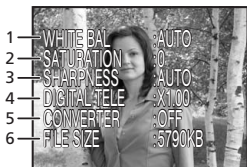
- 1 Camera type
- 2 Firmware information
- 3 Metering mode
- 4 Exposure mode
- 5 Shutter speed
- 6 Aperture

Page 3 (Shooting Information, continued)



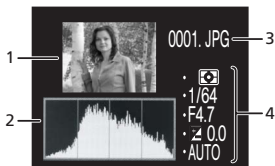
- 1 Exposure compensation
- 2 Focal length
- 3 Focus mode
- 4 Flash status
- 5 Image adjustment
- 6 Sensitivity (ISO equivalency)

Page 4 (Shooting Information, continued)



- 1 White balance
- 2 Color saturation
- 3 Sharpening
- 4 Digital zoom
- 5 Converter lens setting
- 6 File size

Page 5 (Exposure Information)



- 1 Thumbnail preview (flashing border marks image highlights—i.e., brightest areas of image)
- 2 Histogram (shows distribution of tones in image; horizontal axis corresponds to pixel brightness, with dark tones to left and bright tones to right, while vertical axis shows number of pixels of each brightness in image)
- 3 File number and type
- 4 Exposure information (metering, shutter speed, aperture, exposure compensation, sensitivity)

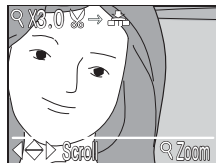
Page 6 (Focus Confirmation)



- 1 File number and type
- 2 Focus information (focal length, shutter speed, aperture, focus mode, noise reduction)
- 3 Focus confirmation (areas of picture that are in focus are sharply outlined; active focus area is shown in red)

Taking a Closer Look: Playback Zoom

Use the **Q** (T) button to zoom in on still pictures displayed in full-screen review (23) or full-frame playback (65).




To	Press	Description
Zoom in	Q (T)	Zoom increases each time button is pressed, to a maximum of 10x. While image is zoomed in, Q icon and zoom ratio are displayed in top left corner of monitor.
View other areas of picture		Use multi selector to scroll to areas of picture not visible in monitor. To use multi selector to view other pictures, cancel zoom.
Zoom out		Zoom decreases each time button is pressed. To cancel zoom, zoom picture out until entire picture is displayed.
Cancel zoom		Cancel zoom and return to full-frame playback or full-screen review.
Create cropped copy (full-frame playback only)	 Shutter button	<p>If icon is displayed at top of monitor, cropped copy of current picture can be created by pressing shutter-release button. Confirmation dialog will be displayed; press multi selector up or down to highlight option, press to right to select.</p> <ul style="list-style-type: none"> • Select Yes to create new picture containing only area visible in monitor • Select No to exit without creating cropped copy










Playback Zoom










Playback zoom is not available with movies or with copies created using the small picture option.

Additional time is required to display RAW- or HI-quality images. If a message is displayed when the  button is pressed to zoom in on the image, wait until the message clears from the display and then try again.

Cropping Pictures

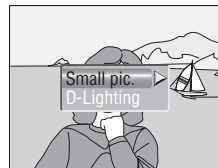
Copies may not display or transfer correctly when viewed on other models of Nikon digital camera. Cropping is not available with RAW or HI-quality images ( 33), pictures taken at an image size of  (3,264 × 2,176) ( 34), pictures created using panorama assist ( 30), movies ( 58), pictures created using the **Ultra HS** or **Intvl timer shooting** options in the **Continuous** menu ( 88), cropped copies, or copies created using the small picture option ( 72). Copies can only be created if sufficient space is available on the memory card.

Cropped Copies

Cropped copies are stored as NORMAL-quality JPEG files and have the same time and date of creation as the original. Depending on the size of the original and the zoom ratio at the time the copy was created, copies will be 3,264 × 2,448 ( 8M), 2,592 × 1,994 ( 5M), 2,048 × 1,536 ( 3M), 1,600 × 1,200 ( 2M), 1,280 × 960 ( 1M), 1,024 × 768 ( PC), 640 × 480 ( TV), 320 × 240 ( L), or 160 × 120 ( S) pixels in size. Copies are stored in separate files on the memory card with names of the form "RSCNnnnn.JPG," where "nnnn" is a four-digit number assigned automatically by the camera. Copies are independent of the originals: deleting the copy has no effect on the original, deleting the original no effect on the copy. Copies are created with the same transfer marking as the original, but any subsequent changes to transfer marking or to protect, hide, and print attributes must be made separately.

Quick Edit



Pressing the shutter-release button during full-frame or thumbnail playback (📷 65, 67) displays the menu shown at right.



Option	Description
Small pic.	Create small copy of current picture.
D-Lighting	Create copy of current picture with enhanced brightness and contrast.

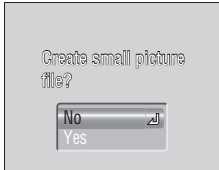

Creating Small Copies: Small Picture

1



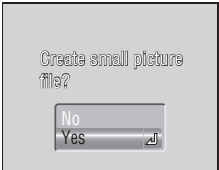

Highlight **Small Pic.**

2



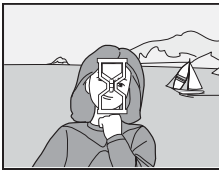

Confirmation dialog displayed.

3



Highlight **Yes.***

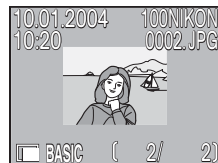
4



Create copy and return to playback.

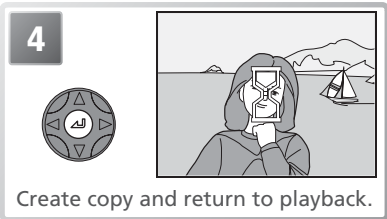
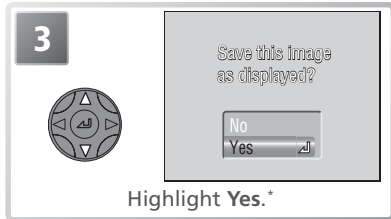
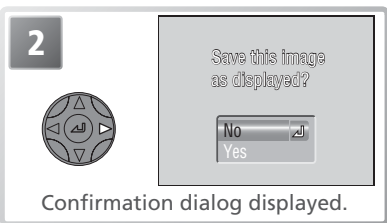
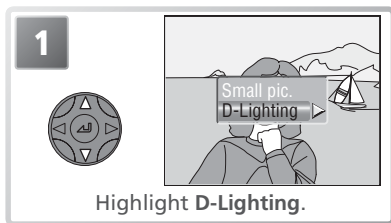
* To exit without creating copy, highlight **No** and press center of multi selector.

Depending on the option selected for **Small pic** in the playback menu (📷 129), copies will be 640×480 (📺), 320×240 (📱), or 160×120 (📄) pixels in size. Small copies are stored as BASIC-quality JPEG files, making them ideal for distribution by e-mail or for use in web pages. When viewed on the camera, copies are surrounded by a gray border. Copies can not be viewed using playback zoom.



Enhancing Contrast: D-Lighting






D-lighting can be used to brighten dark or backlit subjects.




* To exit without creating copy, highlight **No** and press center of multi selector.

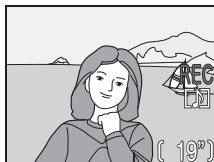
Copies


















Copies are stored as files with names of the form "SSCNnnnn.JPG" (small copies) or "FSCNnnnn.JPG" (D-lighting) where "nnnn" is a four-digit number assigned automatically by the camera. Copies are independent of the originals: deleting the copy has no effect on the original, deleting the original no effect on the copy. Copies are created with the same transfer marking and date and time of recording as the original, but any subsequent changes to transfer marking or to protect, hide, and print attributes must be made separately.

Copies may not display or transfer correctly when viewed on other models of Nikon digital camera. Copies can not be created in quick or full-screen review or from RAW or HI-quality images ( 33), pictures with a size of **3:2** (3,264 × 2,176) ( 34), movies ( 58), pictures created using panorama assist or the **Ultra HS** or **Intvl timer shooting** options in the **Continuous** menu ( 88), cropped copies ( 70), or copies created with the small picture option. D-Lighting is not available with D-Lighting copies. Copies can only be created if sufficient space is available on the memory card.

Voice Memos: Recording and Playback

Brief voice memos can be added to pictures displayed in full-frame playback (65). Voice memos can not be added to movies. Memos are stored on the memory card as WAV-format sound files. During playback, the presence of a memo is indicated by a  icon.



To	Press	Description
Record memo		Memo of up to 20s can be recorded while  button is pressed. Recording ends after about 20s or when  button is released.
Play memo		If  icon appears in file information display during playback, memo can be played back over speaker by pressing  button. Playback ends when entire recording has been played back or  button is pressed a second time.
Pause/resume playback		Press center of multi selector to pause playback. Press again to resume.
Raise volume	 (Q)	Volume indicator displayed in monitor when zoom buttons are pressed. Four levels are available: high () , medium () , low () , and mute () .
Lower volume	 (W) 	
Delete picture or voice memo		Confirmation dialog will be displayed. Press multi selector up or down to highlight option, press center to select. <ul style="list-style-type: none"> • Select Yes to delete both picture and voice memo • Select  to delete voice memo only • Select No to exit without deleting picture or voice memo



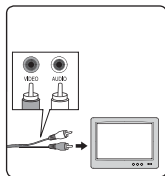
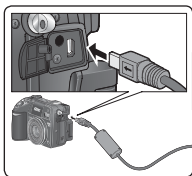
Viewing Pictures on TV

The EG-CP14 audio/video (A/V) cable included with the camera can be used to connect the camera to a television or video-cassette recorder (VCR).


Choosing a Video Mode

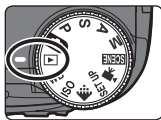
The **Video mode** item in the setup menu offers a choice of NTSC and PAL (see page 141). Be sure that the mode selected matches the standard used by the video device.

- 1 Turn the camera off**
Turn the camera off before connecting or disconnecting the A/V cable.
- 2 Connect the A/V cable**
Insert the black plug into the camera's A/V-out connector. Insert the yellow plug into the video-in jack on the television or VCR. Connect the white plug to the audio-in jack.



- 3 Tune the television to the video channel**
If in doubt, consult the documentation for your television or VCR.

- 4 Rotate the mode dial to **



- 5 Turn the camera on**
The camera monitor will remain off and the television will show the image normally shown in the monitor.

PAL

If **PAL** is selected for **Video mode** while the camera is connected to a video device, video output will be suspended and the camera monitor or electronic viewfinder will turn on while movies are being recorded or while pictures are being taken with **Continuous** set to **Ultra HS**.

Viewing Pictures on a Computer

Using the UC-E6 USB cable and PictureProject software, you can view photographs and movies on a computer. Before pictures can be transferred (copied) to your computer, PictureProject must be installed. For more information on installing PictureProject and transferring pictures to a computer, see the documentation on the reference CD and the *Quick Start Guide*.

Before Connecting the Camera

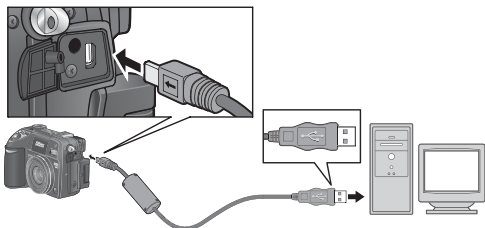
Before transferring pictures to a computer, set the **USB** option in the camera setup menu to match the computer's operating system (▶ 141). The camera supports two options: **Mass storage** (the default option) and **PTP** (Picture Transfer Protocol).




Operating system	USB option
Windows XP Home Edition Windows XP Professional	Choose Mass storage or PTP .
Windows 2000 Professional Windows Millennium Edition (Me) Windows 98 Second Edition (SE)	Choose Mass storage .
Mac OS X (10.1.5 or later)	Choose Mass storage or PTP .

Connecting the USB Cable

Turn the computer on and wait for it to start up. After confirming that the camera is off, connect the UC-E6 USB cable as shown below. Connect the camera directly to the computer; do not connect the cable via a USB hub or keyboard.



UC-E6 USB cable

When the camera is turned on, the lens will extend and  will be displayed in the control panel. All controls except the power switch will be inactive.

Windows 2000 Professional, Windows Millennium Edition (Me), Windows 98 Second Edition (SE)

Do NOT select **PTP** when connecting the camera to a computer running one of the above operating systems. If you have connected the camera to a computer running one of the above operating systems with **PTP** selected in the **USB** menu, disconnect the camera as described below. Be sure to select **Mass storage** before reconnecting the camera.

Windows 2000 Professional

A dialog will be displayed welcoming you to the Found New Hardware Wizard. Click **Cancel** to close the dialog, and then disconnect the camera.

Windows Millennium Edition (Me)

After displaying a message stating that the hardware information database is being updated, the computer will start the Add New Hardware Wizard. Click **Cancel** to exit the wizard, and then disconnect the camera.

Windows 98 Second Edition (SE)

The Add New Hardware Wizard will be displayed. Click **Cancel** to exit the wizard, and then disconnect the camera.

Disconnecting the Camera

If **PTP** is selected in the **USB** menu, the camera can be turned off and the USB cable disconnected once transfer is complete. If the **USB** option in the camera setup menu is still at its default setting of **Mass storage**, the camera must first be removed from the system as described below.

Windows XP Home Edition/Windows XP Professional

Click the "Safely Remove Hardware" icon (🔌) in the taskbar and select **Safely remove USB Mass Storage Device** from the menu that appears.



Windows 2000 Professional

Click the "Unplug or Eject Hardware" icon (🔌) in the taskbar and select **Stop USB Mass Storage Device** from the menu that appears.



Windows Millennium Edition (Me)

Click the "Unplug or Eject Hardware" icon (🔌) in the taskbar and select **Stop USB Disk** from the menu that appears.



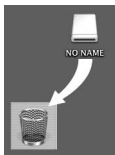
Windows 98 Second Edition (SE)

In My Computer, click with the right mouse button on the removable disk corresponding to the camera and select **Eject** from the menu that appears.



Macintosh

Drag the camera volume ("NO NAME") into the Trash.



Printing Pictures

To print the pictures from the camera memory card:

- select pictures for printing using the **Print set** option and take the memory card to a digital print service center (🔗 124)
- select pictures for printing using the **Print set** option and insert the memory card into a personal photo printer equipped with a card slot (🔗 124)
- use the USB cable to connect the camera to a PictBridge-compatible printer and print pictures directly from the camera (🔗 80)
- transfer the pictures using PictureProject and print them from a computer (see the documentation on the reference CD)

To print the time and date of recording on pictures:

- take pictures using the **Date imprint** option in the setup menu, which imprints the date or date and time of recording directly on pictures as they are taken (🔗 142)
- if the photo printer or print service supports Digital Print Order Format (DPOF), use the **Date** option in the **Print set > Print selection** menu (🔗 124)
- transfer the pictures using PictureProject and print them using the “Print Metadata” option (see the *PictureProject Reference Manual*, on CD)

🔗 “Print Set” and Digital Print Order Format (DPOF)

The **Print set** option in the playback menu is used to create a digital “print order” listing the pictures to be printed, the number of prints, and the information to be included on each print. This print order is stored on the camera memory card in Digital Print Order Format (DPOF). Once a print order has been created, the memory card can be inserted in a DPOF-compatible device and the pictures printed directly from the card. Before using this option, check that the printer or print service supports DPOF. Note that if the **Print set** option has not been used to create a print order, one copy will be printed of all pictures on the memory card.

💡 “Date Imprint” Versus the Print Set “Date” Option

Date imprint	Print selection > Date
Must be set before picture is taken	Set after picture is taken
Date permanently imprinted on picture	Date stored separately
Date appears whenever picture is printed	Date only appears when picture is printed on DPOF-compatible printer

Printing Via Direct USB Connection

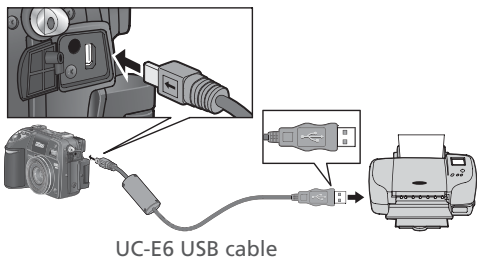
When the camera is connected to a PictBridge-compatible printer via the UC-E6 USB cable, selected pictures can be printed directly from the camera memory card.

1 Set the USB option to PTP

Before pictures can be printed via direct USB connection, the **USB** option in the setup menu must be set to **PTP** (📷 141; the default option is **Mass storage**). Be sure to change the USB option *before* connecting the printer.

2 Connect the USB cable

After confirming that the camera is off, connect the UC-E6 USB cable as shown below.



Before Printing

Before printing, make sure that the printer supports PictBridge. Paper type, tray, and size selections are made from the printer; see the printer manual for details.

Pictures That Can Not Be Printed by Direct USB Connection

Movies (📷 58) and RAW-quality pictures (📷 33) can not be printed via direct USB connection. Some printers may not support direct printing of HI-quality (TIFF) images; consult the documentation provided with the printer for more information.

Use a Reliable Power Source

When printing pictures via direct USB connection, be sure the battery is fully charged. If in doubt, recharge the battery before printing or use the optional EH-54 AC adapter.

PictBridge

PictBridge is an industry standard that ensures compatibility between cameras and printers, allowing pictures to be printed directly from the camera without using a computer.



- 3** Turn the camera on
Turn the camera and printer on. The menu shown at right will be displayed.



Option	Description	Page
Print selection	Print selected pictures.	81–82
Print all images	Print one copy of all pictures on memory card.	83
DPOF printing	Print pictures selected with Print set (📄) 124; selected number of copies will be printed but date and shooting information will not be included).	83–84
Cancel	Exit without printing.	—


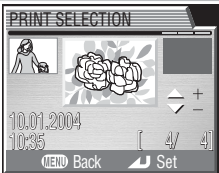
Printing Selected Pictures: Print Selection

1


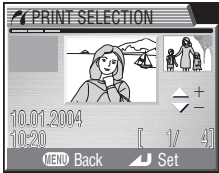
Highlight **Print selection**.

2


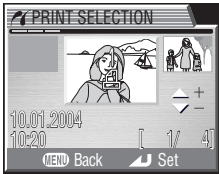
Display selection dialog.

3

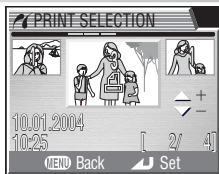
Scroll through pictures. Current picture shown at center of display.

4

Select current picture and set number of prints to 1. Selected pictures marked by 📄 icon.

5



Use multi selector to specify number of prints (up to 9). To deselect picture, press multi selector down when number of prints is 1. Repeat steps 3–5 to select additional pictures.

6



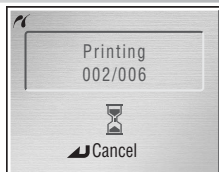
View selected pictures. Press multi selector up, right, left, or down to view pictures not visible in display. After confirming selection, press center of multi selector to proceed to next step.

7



Highlight **Start print**.*

8



Start printing.†

* Select **Back** to return to Step 2, **Cancel** to exit without printing pictures.

† Press center of multi selector to interrupt printing before all pictures have been printed.





9





Message shown at left is displayed when printing is complete. Turn camera off and disconnect USB cable, or press center of multi selector to return to Step 1.

Printing All Pictures: Print All Images

To print one copy of each picture on the memory card:


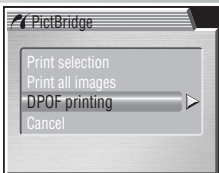






<p>1</p>   <p>Highlight Print all images.</p>	<p>2</p>   <p>Start printing.[†]</p>
---	--

[†] Press center of multi selector to interrupt printing before all pictures have been printed.

<p>3</p>   <p>Message shown at left is displayed when printing is complete. Turn camera off and disconnect USB cable, or press center of multi selector to return to Step 1.</p>	
---	--

Printing the Current Print Order: DPOF Printing

The **Print set** option in the playback menu can be used to create a digital “print order” that specifies the pictures to be printed and the number copies of each print (124). To print the current print order:

<p>1</p>   <p>Highlight DPOF printing.</p>	<p>2</p>   <p>Display options.</p>
<p>3</p>   <p>Highlight Confirm (to exit without printing pictures, highlight Cancel and press center of multi selector).</p>	<p>4</p>   <p>Display print order. Press multi selector up, right, left, or down to view pictures not visible in display.</p>

5



Return to DPOF PRINTING menu.

6

Highlight **Start print**.*

* Select **Confirm** to return to Step 4, **Cancel** to exit without printing pictures.

7



Start printing. To interrupt printing before all images have been printed, press center of multi selector and then turn camera off and disconnect USB cable.

8



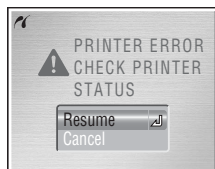
Message shown at left is displayed when printing is complete. Turn camera off and disconnect USB cable, or press center of multi selector to return to Step 1.

✍ Printing DPOF Print Orders on PictBridge Compatible Printers

The **DPOF printing** option is only available if pictures have previously been selected for printing using **Print set** (📄 124–125). Date and shooting information (📄 125) will not be included when pictures are printed via direct USB connection.

✍ Error Messages

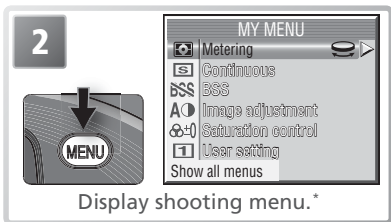
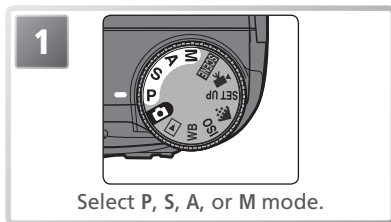
If the dialog shown at right is displayed, an error has occurred. After checking the printer and resolving any problems as directed in the printer manual, highlight **Resume** and press the center of the multi selector to resume printing. Select **Cancel** to exit without printing the remaining images.



The Shooting Menu

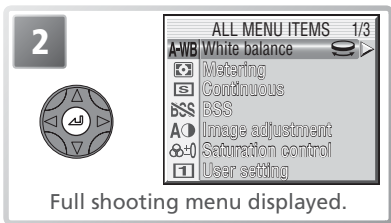
P, S, A, and M Modes Only

When the mode dial is rotated to **P**, **S**, **A**, or **M**, the settings listed on the following page can be adjusted from the shooting menu. To display the shooting menu:

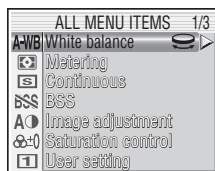


* Illustration shows default menu. Press **MENU** button again to return to shooting mode.

Pressing the **MENU** button displays a one-page custom menu containing six items selected from a total of twenty options available in the full shooting menu (at default settings, the options displayed are **Metering**, **Continuous**, **BSS**, **Image adjustment**, **Saturation control**, and **User setting**). The items that appear in the custom menu can be selected using the **My menu** option (111). To display the full shooting menu, which consists of three pages of options:



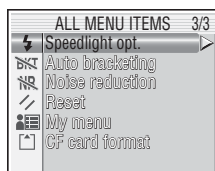
The full shooting menu contains the following options:



ALL MENU ITEMS 1/3	
White balance	53–55
Metering	87
Continuous	88–90
BSS	91–92
Image adjustment	93
Saturation control	94
User setting	95



ALL MENU ITEMS 2/3	
Image mode	33–36
Sensitivity	51–52
Image sharpening	96
Lens	97
Exposure options	98–99
Focus options	100–102
Zoom options	103



ALL MENU ITEMS 3/3	
Speedlight opt.	104–106
Auto bracketing	107–108
Noise reduction	109
Reset	110
My menu	111
CF card format	112

The Icon

A icon appearing next to a highlighted option indicates that the selected option can be changed by rotating the command dial.

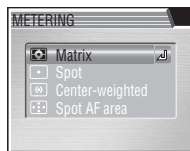
Metering





P · S · A · M

MENU

Metering



Choose a metering method suited to the composition and lighting conditions.

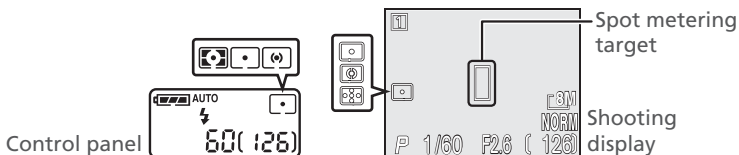


Mode	How it works	When to use it
 Matrix	Camera compares measurements from 256 areas of frame with library of typical compositions to set exposure for entire frame.	Recommended for most situations.
 Spot	Camera sets exposure by metering area shown by square in center of monitor. Only about 1/32 of frame is metered.	Ensures that subject in metering target is correctly exposed even if background is much brighter or darker. Can be used with autoexposure lock (🔒 22) to meter off-center subjects.
 Center-weighted	Camera meters entire frame but assigns weight of 80% to area in center of frame occupying roughly 1/4 of total.	Classic meter for portraits; preserves background details while letting lighting conditions at center of frame determine exposure. Can be used with autoexposure lock (🔒 22) to meter off-center subjects.
 Spot AF area	Links spot metering to active focus area when auto or manual focus area selection is in effect (🔒 100).	Use instead of autoexposure lock to meter off-center subjects. Not available if focus-area selection is off.

The Shooting Menu

Metering

Metering is shown by icons in the control panel and shooting display. No icon appears in the shooting display when  (**Matrix**) is selected. When spot AF-area metering is selected, a  icon appears in the control panel.



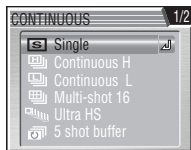
Continuous















P · S · A · M

MENU

Continuous

Use the options in this menu to capture a fleeting expression on a portrait subject, photograph a subject that is moving unpredictably, or capture motion in a series of pictures.



Option	Description
 Single	Camera takes one picture each time shutter-release button is pressed.
 Continuous H ^{1,2}	While shutter-release button is pressed, camera records up to 5 pictures at up to 2.3 fps. Monitor and electronic viewfinder turn off during shooting.
 Continuous L ^{2,3}	Camera shoots at up to 1.2 fps while shutter-release button is pressed. Number of pictures that can be recorded before  icon is displayed and shooting is suspended varies with image mode; up to 11 FINE/  pictures can be recorded ( 89).
 Multi-shot 16 ^{2,3}	Each time shutter-release button is pressed, camera takes 16 consecutive pictures 816×612 pixels in size at about 1.6 fps and arranges them in 4 rows to form a single picture measuring 3,264×2,448 pixels. Image size automatically set to  . 
 Ultra HS ⁴	While shutter-release button is pressed, camera records up to 100 pictures at rate of up to 30 fps. Image quality is automatically set to NORMAL and image size to  (640×480). With each sequence, camera creates new folder in which all photos in sequence are stored. Folder name consists of “N_” followed by three-digit sequence number assigned automatically by camera. Exposure count is shown in shooting display.
 5 shot buffer ^{2,3}	Camera shoots at up to 0.7 fps while shutter-release button is pressed, but only last five shots are saved to memory card.
 Intvl timer shooting ³	Camera takes pictures automatically at specified interval. See “Interval Timer Photography” ( 90).

1 HI image quality reset to EXTRA.

2 Built-in Speedlight turns off.

3 RAW and HI image quality reset to EXTRA.

4 Built-in and optional Speedlights turn off.

Other Camera Settings

Settings other than **Single** can not be used in combination with BSS (📷 91), white-balance bracketing (📷 107), or noise reduction (📷 109). **Multi-shot 16**, **Ultra HS**, **5 shot buffer**, and **Intvl timer shooting** can not be used in combination with auto-exposure bracketing (📷 107–108). Digital zoom (📷 18) can not be used at settings of **Multi-shot 16** or **Ultra HS**.

Focus, Exposure, and White Balance

At settings other than **Single** and **Intvl timer shooting**, focus, exposure, and white balance are determined by the first picture in each series.

Ultra HS

During shooting, progress is shown by the zoom indicator in the monitor, from **S** (start) to **E** (end). To interrupt shooting before one hundred pictures have been recorded, lift your finger from the shutter-release button.

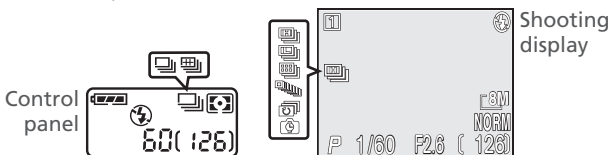


The Memory Buffer

During shooting, pictures are stored in a temporary memory buffer before being transferred to the memory card for permanent storage. You can continue to take pictures as long as room is available in the buffer. The number of pictures that can be stored in the buffer varies with image quality and size: the maximum that can be stored at FINE/📷 is about eleven pictures. When the buffer is full, a ⏸ (wait) icon will be displayed and shooting will be suspended. More pictures can be taken as soon as enough memory becomes available in the buffer.


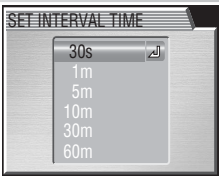

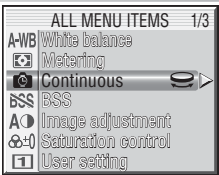

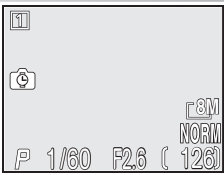

Continuous

At settings other than **Single**, the current “continuous” setting is shown by an icon in the shooting display. At settings of **Continuous H**, **Continuous L**, **Ultra HS**, **5 shot buffer**, and **Intvl timer shooting**, a 📷 icon appears in the control panel. A 📷 icon appears in the control panel when **Multi-shot 16** is selected.



Interval Timer Photography

To display the menu shown in Step 1, below, highlight **Intvl timer shooting** in the CONTINUOUS menu and press the multi-selector to the right.

<p>1</p> 		<p>Choose interval between pictures from 30s (thirty seconds), 1 m (one minute), 5m (five minutes), 10m (ten minutes), 30m (thirty minutes), and 60m (sixty minutes).</p>
<p>2</p> 		<p>3</p>  
<p>4</p> 	<p>Start recording. Camera will take pictures at specified interval until shutter-release button is pressed again, memory card is full, or 1,800 pictures have been taken.</p>	

Make selection.

Return to shooting mode.

Take a Test Shot

Take a test shot and view the results before beginning recording.

Use a Reliable Power Source

To prevent shooting from ending unexpectedly, use the optional EH-54 AC adapter for interval timer photography.

During Recording

To save power, the monitor and electronic viewfinder turn off between pictures. The display turns on automatically immediately before the camera takes the next shot.

Folders

Each sequence of pictures is stored in a folder with a name consisting of a three-digit folder number followed by "INTVL" (e.g., "101INTVL").

Quick Review/Full Screen Review

Quick review and full screen review are not available during interval timer shooting.

Best Shot Selector (BSS)




P·S·A·M

MENU





BSS | BSS

The options in the “best-shot selector” (BSS) menu are recommended for situations in which inadvertent camera movement can produce blurred pictures, or when parts of the image are prone to under- or over-exposure.



Option	Description
BSS Off	BSS off. 
BSS On	Camera takes shots while shutter-release button is pressed, to a maximum of ten. These images are then compared and sharpest picture (picture with highest level of detail) saved to memory card. Flash turns off automatically and focus, exposure, and auto white balance for all photos are determined by the first picture in each series. Recommended for situations in which inadvertent camera movement can produce blurred pictures, for example when: <ul style="list-style-type: none"> • the camera is zoomed in • lighting is poor and the flash can not be used • macro close-up is in effect 
AE Exposure BSS	Selecting this option displays sub-menu shown at right. Choose from: <ul style="list-style-type: none"> • Highlight BSS: picture with smallest area of overexposure is selected. • Shadow BSS: picture with smallest area of under-exposure is selected. • Histogram BSS: of pictures with least under- and over-exposure, camera chooses picture with overall exposure closest to optimum. Camera takes five shots each time shutter-release button is pressed. These images are then compared and picture that best meets selected criterion saved to memory card. Flash turns off automatically and focus and auto white balance for all photos are determined by the first picture in each series. Recommended for subjects containing areas of high contrast, when it is difficult to set exposure correctly. 

Restrictions on BSS

BSS may not produce the desired results with a moving subject or if the composition is changed while the shutter-release button is pressed all the way down. BSS can not be used with the self timer ( 41–42), **Continuous** ( 88) settings other than **Single**, autoexposure or white-balance bracketing ( 107), or noise reduction ( 109). Image-quality settings of RAW and HI are not available with exposure BSS.

BSS

At settings other than **Off**, the current BSS setting is indicated by an icon in the shooting display.

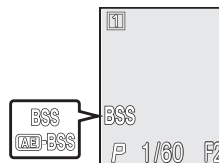


Image Adjustment

P·S·A·M →

MENU →

Auto Image adjustment

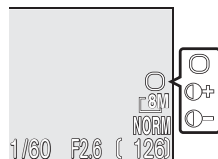
The options in the image adjustment menu control contrast.



Option	Description
Auto	Camera automatically adjusts contrast according to shooting conditions.
Normal	Camera performs same standard contrast adjustment on all pictures.
+ More contrast	Picture processed to emphasize difference between light and dark areas, enhancing contrast. Useful when shooting under overcast skies or shooting low contrast subjects such as landscapes.
- Less contrast	Picture processed to decrease difference between light and dark areas, reducing contrast. Recommended when light is very bright, creating strong shadows on subject.

Image Adjustment

At settings other than **Auto**, the current image-adjustment setting is indicated by an icon in the shooting display. No image adjustment icon is displayed when **Black&white** is selected for **Saturation control**.



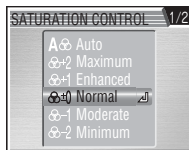
Saturation Control

P·S·A·M

MENU


Saturation control

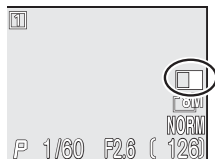
Saturation control is used to heighten or reduce the vividness of colors.



Option	Description
Auto	Camera automatically adjusts saturation according to shooting conditions.
+2 Maximum	Use for vivid, photoprint effect when taking pictures that will be printed "as is," without further modification.
+1 Enhanced	
Normal	Recommended for most situations.
-1 Moderate	Use when taking pictures that will later be retouched on a computer.
-2 Minimum	
Black&white	Pictures recorded in black-and-white. Black-and-white images require same amount of memory as color images, but show a higher level of detail. Black&white can not be used in combination with white balance (53), white-balance bracketing (107), or RAW image quality (33).

Black-and-White

When **Black&white** is selected, monitor shows the view through the lens in black-and-white and a  icon appears in the shooting display.



User Setting

P·S·A·M

MENU

User setting

Camera settings can be stored in two separate “banks,” Bank 1 and Bank 2. By default, changes to camera settings are stored in Bank 1. To store another combination of frequently-used settings, select Bank 2 and adjust settings as desired. To switch from one combination of settings to the other, select the desired bank in the **User setting** menu.



User settings banks store the following settings:

Shooting menu options			
White balance*	Metering	Continuous	BSS
Image adjustment	Saturation control	Sensitivity	Image sharpening
Lens	AE lock	Bulb/time	AF area mode
Auto-focus mode	Focus confirmation	Digital tele	Fixed aperture
Pop up	Flash exp. comp.	Speedlight cntrl	Auto bracketing
Noise reduction			

* Any changes to preset white balance apply to both banks, regardless of the bank currently selected.

Other settings		
Flash mode	Focus mode	Exposure compensation

User Setting

In **P**, **S**, **A**, and **M** modes, the number of the current user settings bank appears in the shooting display.



Image Sharpening

P · S · A · M

MENU

Image sharpening





The camera automatically processes pictures to emphasize the borders between light and dark areas, making edges seem sharper. As this processing occurs after shooting, its effects can not be previewed in the shooting display, but they will be visible in the final picture. In **P**, **S**, **A**, and **M** modes, the image-sharpening menu controls the amount of sharpening performed.



Option	Description
A Auto	Camera sharpens edges for optimal results; amount of sharpening varies from shot to shot.
High	Pictures processed to increase sharpness, making edges more distinct.
Normal	Camera performs same standard level of sharpening on all images.
Low	Sharpening reduced below normal level.
Off	No sharpening performed. Use when taking pictures that will later be retouched on a computer.

The lens menu is used to adjust camera settings for optimal results with the optional converter lenses and adapters listed below. Note that these accessories require a lens adapter ring (📷 143). For complete information on use and handling, see the documentation provided with each converter lens.



Option	Description
 Normal	No modifications are made to settings. Use when no converter lens is attached (be sure to remove lens adapter ring).
 Wide adapter (for WC-E75)	Camera zooms out to widest angle. Zoom can be adjusted manually.
 Telephoto (for TC-E3ED, TC-E3PF)	Optical zoom set to maximum optical zoom position.
 Fisheye (for FC-E9)	<ul style="list-style-type: none"> • Zoom fixed at position suitable for fisheye lens. • Focus fixed at position suitable for fisheye lens. • Metering fixed at center-weighted (📷 87). • Corners of frame blacked out to create circular frame.

Using a Flash

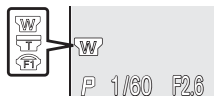
The built-in Speedlight turns off automatically at settings other than **Normal**. Optional Speedlights mounted on the accessory shoe (📷 104) can be used when **Wide adapter** or **Telephoto** is selected; both built-in and optional Speedlights turn off when **Fisheye** is selected.

Use Autofocus

When shooting at settings other than **Normal**, use autofocus (📷 40). Manual focus and infinity will not produce results that accurately reflect the selected focus distance.

Lens

At settings other than **Normal**, the current lens setting is indicated by an icon in the monitor.



Exposure Options

P·S·A·M

MENU

EXP Exposure options

The exposure options menu contains two options for controlling exposure.



AE Lock

Autoexposure (AE) lock produces a series of pictures with the same exposure and white balance. This can be used when taking photographs that will later be joined into a single image after transfer to a computer (e.g., a 360° virtual-reality image).



Option	Description
Off	Restores normal exposure and white balance.
On	First picture taken after On is selected sets exposure (shutter speed, aperture, exposure compensation, and sensitivity) and white balance for all subsequent pictures. Flash turns off while AE lock is in effect.
Reset	Clears existing exposure settings. First picture taken after this option is selected sets exposure (shutter speed, aperture, exposure compensation, and sensitivity) and white balance for all subsequent pictures.

AE Lock

While AE lock is in effect, an **AE-L** (autoexposure lock) icon appears in the shooting display. After you select **On** or **Reset**, this icon turns yellow to indicate that exposure will be locked with the next shot. The icon will turn white once you have taken a picture to set exposure.



Bulb/Time

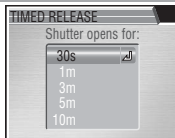
In mode **M**, shutter speed can be set to BULB or TIME for long exposures of up to ten minutes (📷 50). This menu controls how long exposures are made.

Long Exposures

Longer exposure times increase the amount of noise visible in the picture; we recommend that noise reduction (📷 109) be turned on for long exposures.



Option	Description
Bulb release	Shutter will remain open as long as shutter-release button is held down, to a maximum of ten minutes (if supplied ML-L3 remote control is used, shutter will open when remote-control shutter-release button is pressed and will close after ten minutes or when shutter-release button is pressed again).
Timed release	Selecting this option displays menu of exposure times. Choose from 30s (thirty seconds), 1m (one minute), 3m (three minutes), 5m (five minutes), or 10m (ten minutes). Shutter will open when shutter-release button is pressed and will remain open until specified exposure time has elapsed or the shutter-release button is pressed again.



The ML-L3 Remote Control

The supplied ML-L3 remote control (📷 42) can be used to eliminate blur caused by the camera moving when the shutter-release button is pressed at the beginning or end of a long time exposure. Before using the ML-L3, activate the self-timer (📷 41).

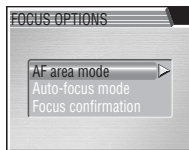
Focus Options

P·S·A·M

MENU

Focus options

The focus options menu contains three options controlling focus settings.



AF Area Mode

In **▶** (auto) mode, the camera focuses on the subject in the center of the frame. In **P**, **S**, **A**, and **M** modes, the following focus-area selection options are available:



Option	Description
Auto	Camera automatically selects focus area containing subject closest to camera. Selected focus area is displayed in red when shutter-release button is pressed halfway. Choose this setting to minimize risk of pictures being out of focus when subject is moving erratically or in other situations in which there is little time to check focus. Can be used with spot AF-area metering to meter exposure only in active focus area (📷 87).
Manual	Nine focus areas are shown in shooting display; press multi selector up, right, left, or down to select focus area containing subject. Can be used instead of focus lock (📷 22) to focus on relatively motionless subjects that not centered in frame, or with spot AF-area metering (📷 87) to meter exposure only in selected focus area.
Off	Camera focuses on subject in center focus area. No focus area indicators appear in shooting display. Use focus lock (📷 22) to focus on off-center subjects. Pressing multi selector to right when Off is selected displays AF system sub-menu (📷 101).



Digital Zoom

Focus area selection is not available with digital zoom (📷 18). The center focus area is used while digital zoom is in effect.

Manual Focus Area Selection in Scene Mode

Manual focus area selection is available in some scene modes (📷 26). Select the focus area as described for **Manual**, above.

AF System

When **Off** is selected for AF area mode, the focus system can be selected from the following options:



Option	Description
Hybrid AF	Fast focus: AF ranging sensor estimates distance before camera focuses. Use for fast shutter response or when subject is moving erratically.
Standard AF	Camera focuses using contrast detection. Use when time is available to frame shots and subject is relatively stationary. Standard AF is selected automatically when camera is unable to measure distance to subject using AF ranging sensor or when option other than Normal is selected for Lens (97).

Auto-Focus Mode

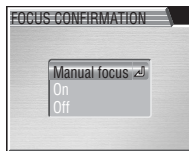
Auto-focus mode determines how the camera focuses when shooting still pictures (for information on the autofocus options available in movie mode, see "Movies"; 59). Regardless of the option chosen, pictures can be taken even when the camera is not in focus; check the focus indicator before shooting.



Option	Description
Single AF	Camera focuses when shutter-release button is pressed halfway.
Continuous AF	Camera adjusts focus continuously until shutter-release button is pressed halfway, minimizing time needed to focus before picture is taken.

Focus Confirmation

Use focus confirmation to determine exactly what areas of the frame are in focus before a picture is taken. Focus confirmation affects only the view through the lens shown in the shooting display; no indicators of focus appear in the final picture.



Option	Description
Manual focus	Areas of the image that are in focus will be sharply outlined in shooting display in manual focus mode (ⓘ 56).
On	Areas of the image that are in focus will be sharply outlined in shooting display in all focus modes.
Off	No indication of focus appears in shooting display.

Zoom Options

P·S·A·M

MENU

Zoom options

The zoom options menu contains options for digital and optical zoom.






Digital Tele

When **On** is selected, pressing the **T** button for about 2 s at the maximum optical zoom position activates digital zoom. When digital zoom is in effect, the camera focuses on the center focus area and center-weighted metering is used (at zoom factors of 2× or above, the camera meters only the center focus area). Select **Off** to disable digital zoom.



Digital Zoom

Digital zoom is not available with **RAW** or **HI** image quality ( 33), at settings of **Multi-shot 16** or **Ultra HS** ( 88), or when an option other than **Normal** is selected for **Lens** ( 97).

Fixed Aperture

Controls whether aperture varies with zoom position.

Option	Description
On	In A and M modes, aperture is kept as close as possible to selected f/-number. To prevent selected f/-number from exceeding exposure range at new zoom position, choose aperture of around f/5 to f/7.
Off	Aperture changes with zoom position.



Speedlight Options

P · S · A · M

MENU

Speedlight opt.


The **Speedlight opt.** menu contains three options for controlling the built-in Speedlight and optional flash units mounted on the camera accessory shoe.



Pop Up

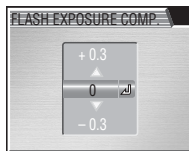
Controls whether the built-in Speedlight pops up automatically when required.



Option	Description
Auto	When shutter-release button is pressed halfway Built-in Speedlight pops up automatically as required and fires when shutter-release button is pressed all the way down. Once raised, Speedlight will only fire when required.
Manual	Built-in Speedlight pops up when  button is pressed, and fires whenever shutter is released.

Flash Exp. Comp.

Use this option to adjust flash output by -2.0EV to $+2.0\text{EV}$ in increments of $\frac{1}{3}\text{EV}$.

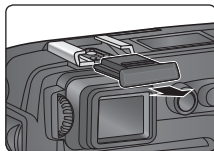


Lens Hoods

Remove lens hoods (available separately;  143) when using the flash.

The Accessory Shoe

The camera is equipped with an accessory shoe, allowing optional Nikon SB-800 and SB-600 Speedlights to be mounted directly on the camera without a sync cable. The accessory shoe is equipped with a safety lock for Speedlights with a locking pin, including the SB-800 and SB-600. Remove the accessory shoe cover before attaching a Speedlight, and replace the cover when the accessory shoe is not in use.



Speedlight Cntrl




































This option is used to control the built-in and optional Speedlights when using optional flash accessories mounted on the camera's accessory shoe.

Option	Description
Auto	Optional Speedlight fires, if attached. If not, built-in Speedlight fires instead.
Internal off	Built-in Speedlight turns off.




Flash Mode Indicators for Optional Speedlights

When **Internal off** or **Auto** is selected for **Speedlight cntrl** and an optional Speedlight is mounted on the camera, flash mode is indicated as shown below. Note that the camera will be unable to set flash output correctly if the flash-ready lamp on the optional Speedlight is off. Be sure the flash ready lamp is on before taking a picture.

Flash mode ("Pop up" set to Auto)	Control panel	Shooting display	Flash mode ("Pop up" set to Manual)	Control panel	Shooting display
Auto	AUTO 	A 	Anytime Flash (fill flash)		 
Flash Cancel (off)			Fill flash + red-eye reduction	 	  
Auto with red-eye reduction	AUTO  	 	Fill flash + slow sync	 	 
Anytime Flash (fill flash)		 	Fill flash + rear-curtain sync	 	 
Slow sync	AUTO  	 			
Rear-curtain sync	AUTO  	 			

SB-800 and SB-600 Speedlights

Set the optional Speedlight to TTL mode. In this mode, SB-800 and SB-600 Speedlights will use monitor preflashes for i-TTL flash control (Standard i-TTL fill-flash for Digital SLR). Note, however, that the camera does not support Advanced Wireless Lighting, auto FP high-speed sync, FV lock, or AF-assist for multi-area AF. See the Speedlight manual for more information.

Check the flash-ready light on the optional Speedlight before shooting. When set to STBY (standby), the SB-800 and SB-600 will power on and off at the same time as the camera. If **Normal** is selected for **Lens** and the Speedlight is on, the flash angle will change as the camera is zoomed in and out. If red-eye reduction ( 37) is in effect, the red-eye reduction lamp on the Speedlight will light and the camera will not emit red-eye reduction pre-flashes.

Auto Bracketing

P·S·A·M

MENU

Auto bracketing

In some situations, you may find it difficult to select appropriate exposure-compensation and white-balance settings, and yet not have time to check the results and adjust settings after each shot. Auto bracketing can be used to vary these settings automatically over a series of pictures, “bracketing” a selected exposure-compensation or white-balance setting.



Option	Description
Off	Restores normal exposure and white balance.
Auto bracketing	Camera varies exposure with each shot, bracketing current exposure compensation value (autoexposure bracketing; 108).
WB bracketing	Camera takes three shots each time shutter-release button is fully pressed, bracketing current white balance setting (53) to produce one picture with normal white balance, one picture with bluish cast, and one picture with reddish cast. Recording time roughly triples. Use when unsure of appropriate value for white balance.

Restrictions on Auto Bracketing

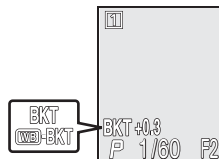
Autoexposure bracketing can not be used in mode **M** (49) or with **BSS** (91), exposure **BSS** (91), **AE lock** (98), **noise reduction** (109), or **Continuous** settings of **Multi-shot 16**, **Ultra HS**, **5 shot buffer**, or **Intvl timer shooting** (88).

White balance bracketing can not be used in mode **M** (49) or with **BSS** (91), exposure **BSS** (91), **AE lock** (98), **noise reduction** (109), an image quality of **RAW** or **HI** (33), **Black&white** (94), or **Continuous** settings other than **Single** (88).

Auto Bracketing

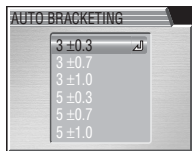
When autoexposure bracketing is in effect, a **BKT** icon is displayed in the monitor with the selected exposure increment.

When white balance bracketing is in effect, **WB-BKT** icon appears in the monitor.



Autoexposure Bracketing

When **Auto bracketing** is selected, exposure varies with each shot; the number of shots and amount of exposure compensation performed are selected from the sub-menu shown at right. Values are added to the exposure compensation value selected with the **EV** button (44). Bracketing is performed by varying shutter speed (modes **A** and **M**), aperture (mode **S**), or shutter speed and aperture (mode **P**).



Option	Number of shots	Exposure increment	Bracketing order
3, ±0.3	3	± $\frac{1}{3}$ EV	0, +0.3, -0.3
3, ±0.7	3	± $\frac{2}{3}$ EV	0, +0.7, -0.7
3, ±1.0	3	±1 EV	0, +1.0, -1.0
5, ±0.3	5	± $\frac{1}{3}$ EV	0, +0.7, +0.3, -0.3, -0.7
5, ±0.7	5	± $\frac{2}{3}$ EV	0, +1.3, +0.7, -0.7, -1.3
5, ±1.0	5	±1 EV	0, +2.0, +1.0, -1.0, -2.0

Continuous Shooting (Autoexposure Bracketing)

At settings of **Continuous H** and **Continuous L** (88), shooting will pause after each bracketing cycle is complete. When **Single** is selected, shutter-release button must be pressed once for each shot in bracketing cycle.

Auto Flash and Auto ISO (Autoexposure Bracketing)

In auto flash mode (37), the flash setting for the first shot in each bracketing cycle applies to the remaining pictures. If the flash fires on the first shot, it will fire for the remaining shots; if the flash does not fire on the first shot, it will not fire for the remaining shots. If sensitivity (ISO equivalency) is set to **Auto** (51) in mode **S** or **A**, the sensitivity value for the first shot in each bracketing cycle will also apply to the remaining pictures (in mode **P**, sensitivity will vary with each shot).

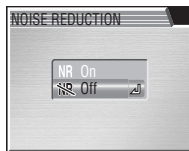
Noise Reduction

P·S·A·M

MENU

NR Noise reduction

At slow shutter speeds, “noise” in the form of randomly-spaced, brightly-colored pixels may appear in pictures, particularly in shadows. Noise reduction can be used to reduce noise at shutter speeds slower than $\frac{1}{4}$ s.



Option	Description
NR On	Noise reduction takes effect at shutter speeds of about $\frac{1}{4}$ s or slower. Time required to save pictures to memory card more than doubles.
NR Off	Noise reduction off; camera functions normally.

Restrictions on Noise Reduction

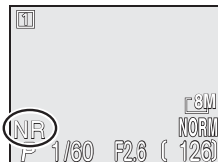
Noise reduction can not be used in combination with BSS (91), exposure BSS (91), exposure or white-balance bracketing (107), or at **Continuous** settings other than **Single** (88).

Sensitivity (ISO Equivalency)

Noise reduction will reduce the noise that occurs at higher sensitivities (51), but only in pictures taken at shutter speeds slower than $\frac{1}{4}$ s.

Noise Reduction

When noise reduction is on, an **NR** icon appears in the shooting display.



Reset

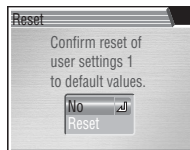
P·S·A·M →

MENU →

Reset

Select this option to restore settings for the current User Setting bank (95) to their original state.

Option	Description
No	Exit menu, leaving settings unchanged.
Reset	Restore settings to default values.



Choosing **Reset** restores the following options for the current User Setting bank to their default values. Settings in the other bank are unaffected.

Basic settings	Default
Flash mode	Auto
Focus mode	Autofocus
Self-timer	Off
Exposure comp.	±0

Mode dial settings	Default
Image mode ¹	
Image quality	NORMAL
Image size	8M (3264 × 2448)
White balance ²	Auto
Sensitivity	Auto

Menu options	Default
Metering	Matrix
Continuous	Single
BSS	Off
Image adjustment	Auto
Saturation control	Normal
Image sharpening	Normal
Lens	Normal

Menu options	Default
Exposure options	
AE lock	Off
Bulb/time	Bulb release
Timed release	30 s

Focus options	
AF area mode	Off
AF system	Hybrid AF
Auto-focus mode	Single AF
Focus confirmation	MF

Zoom options	
Digital tele	On
Fixed aperture	Off

Speedlight options	
Pop up	Auto
Flash exp. comp.	0.0
Speedlight cntrl	Auto
Auto bracketing	Off
Noise reduction	Off

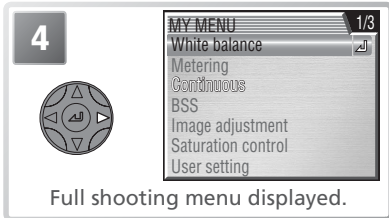
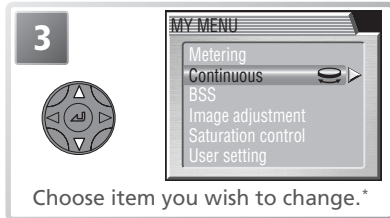
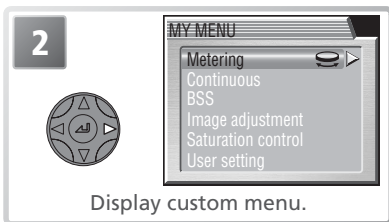
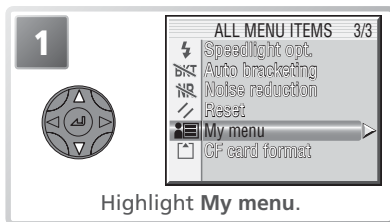
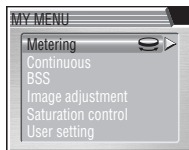
1 Applies to both banks.

2 Fine-tuning reset to 0.

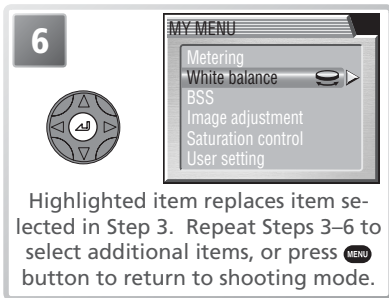
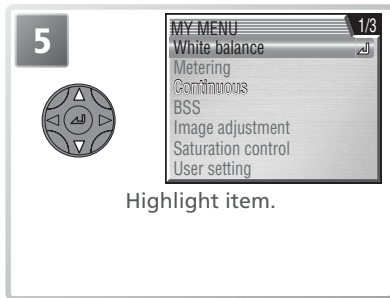
My Menu

P·S·A·M → MENU → My menu

This option determines which of the twenty items in the full shooting menu appear in the six-item custom menu displayed when the **MENU** button is pressed in **P**, **S**, **A**, and **M** modes. At default settings, the custom menu contains metering, continuous, BSS, image adjustment, saturation control, and User Setting options. To change the items displayed in the custom menu:



* In place of steps 3–5, selection can be made by highlighting items and rotating command dial (○).



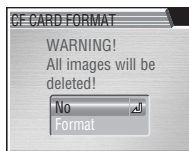
CF Card Format

P·S·A·M →

MENU →

CF card format

CF card format formats memory cards for use in the camera. *Note that formatting memory cards permanently deletes all data they contain, including protected pictures and any other data that may be on the card.* Before formatting, be sure to transfer any valued pictures to a computer (📁 76–78).




Option	Description
No	Exit without formatting memory card.
Format	Format memory card. Message shown at right displayed while formatting is in progress. <i>Do not turn the camera off, remove the battery or memory card, or unplug the AC adapter (available separately) while this message is displayed.</i>




The Playback Menu

The playback menu contains the following options:

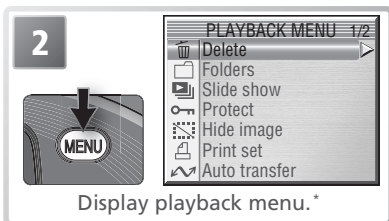
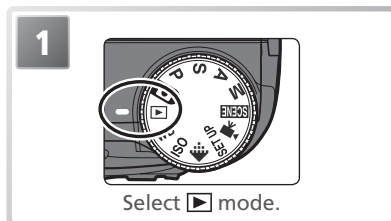



PLAYBACK MENU 1/2	
Delete	114-115
Folders	116-119
Slide show	120-121
Protect	122
Hide image	123
Print set	124-125
Auto transfer	126-127



PLAYBACK MENU 2/2	
Move image	128-129
CF card format	129
Small pic	129

To display the playback menu:



* Press  button again to return to playback.

Delete



The delete menu contains the following options:

Option	Description
Selected images	Delete selected pictures.
Erase all images	Delete all pictures.



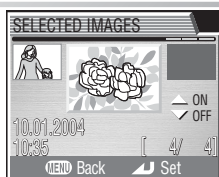
Deleting Selected Pictures

1



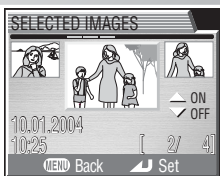
Highlight **Selected images**.

2



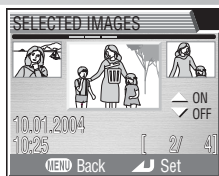
Display selection dialog.

3



Scroll through pictures. Current picture shown at center of display.

4



Select current picture. Selected pictures marked by icon.

5

Repeat steps 3–4 to select additional pictures. To deselect picture, select and press multi selector up or down.

6



Confirmation dialog displayed. Press multi selector up or down to highlight option, press center to select:

- Select **Yes** to delete selected pictures
- Select **No** to exit without deleting pictures

Deleting All Pictures

1



Highlight **Erase all images**.

2



Confirmation dialog displayed. Press multi selector up or down to highlight option, press center to select:

- Select **Yes** to delete all pictures that are neither hidden nor protected
- Select **No** to exit without deleting pictures

Before Deletion

Once deleted, pictures can not be recovered. If desired, transfer pictures to a computer before deletion ( 76–78).

Protected Pictures

Pictures marked with a  icon are protected and can not be deleted ( 122).

Hidden Pictures

Pictures hidden with the **Hide image** option ( 123) are not displayed in the **Delete > Selected images** menu and can not be deleted.

Folders



MENU



Folders

By default, pictures are stored in a folder with the name NIKON. To make it easier to locate pictures during playback, additional folders can be created to organize pictures by theme. The options in the **Folders** menu can be used to:



Option	Description
Folder options	Create, rename, and delete folders.
Folders	Select folders for storage or playback.

Folder Options

The **Folder options** menu contains the following options:

Option	Description
New	Create new folders.
Rename	Rename existing folders.
Delete	Delete folders and all items they contain.



Creating New Folders

The Playback Menu

1

Highlight **New**.

2



Display new folder dialog.

3



Highlight letter.

4



Edit letter.*

* Folder names can include upper case letters ("A"–"Z"), numbers, and spaces.

5 Repeat steps 3 and 4 to create new five-letter folder name.

6



Create folder. New folder will be used for storage and playback until another folder is selected.

Renaming Existing Folders

1



Highlight **Rename**.

2



Display list of existing folders.*

* Folder NIKON can not be renamed.

3



Highlight folder name.

4



Select folder.





5

Edit name as described in steps 3–6 of “Creating New Folders.” Selected folder will be used for storage and playback until another folder is selected.



Folder Options

The **Folder options** menu can also be accessed from the setup menu (133).

Deleting Folders

<p>1</p> 	 <p>FOLDER OPTIONS</p> <p>New Rename Delete</p>	<p>2</p> 	 <p>DELETE</p> <p>OSAKA TOKYO KOBE</p>
<p>Highlight Delete.</p>		<p>Display list of existing folders.*</p>	

* Folder NIKON can not be deleted.

<p>3</p> 	 <p>DELETE</p> <p>OSAKA TOKYO KOBE</p>	<p>Highlight folder name.</p>
---	---	-------------------------------

<p>4</p> 	 <p>DELETE</p> <p>Delete :OSAKA</p> <p>Confirm folder deletion?</p> <p>No Yes</p>	<p>Confirmation dialog displayed. Press multi selector up or down to highlight option, press center to select.</p> <ul style="list-style-type: none">• Select No to exit without deleting folder• Select Yes to delete selected folder <p>Until another folder is selected, new pictures will be stored in folder NIKON and pictures in all folders will be visible during playback.</p>
---	--	---

Hidden and Protected Pictures

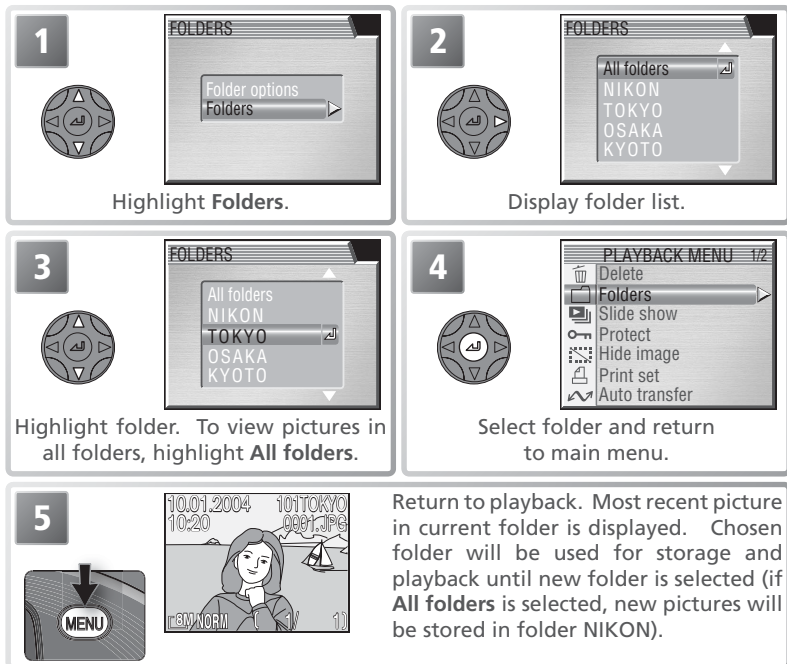
If the selected folder contains hidden or protected pictures, the folder will not be deleted. Note, however, that any pictures it contains that are neither hidden nor protected *will* be deleted.

Panorama Assist/Ultra HS/Intvl Timer Shooting

Each series of pictures taken at the above settings is stored in its own folder. To view only the pictures in a selected series, choose the appropriate folder from the **Folders > Folders** menu (119). To delete all pictures in a selected series, select the appropriate folder in the **Folders > Folder options > Delete** menu.

Selecting a Folder for Storage and Playback: Folders

The **Folders** item in the playback **Folders** menu (📁 116) can be used to select all folders for playback, or to view pictures in a selected folder.



Selecting a Folder for Storage

The **Folders** > **Folders** item in the setup menu (📁 133) is used to select the folder in which subsequent pictures will be stored. Highlight **Folders** in the setup **Folders** menu and follow steps 1–4 above to select a folder. Until another folder is chosen, all new pictures will be stored in the selected folder. Note that folders created with **Panorama assist** (📁 31), **Ultra HS** (📁 88), and **Intvl timer shooting** (📁 88) can not be used for storage; if such a folder is selected for playback, new pictures will be stored in the folder NIKON.

Slide Show

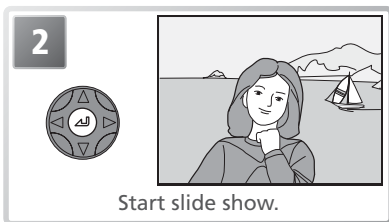
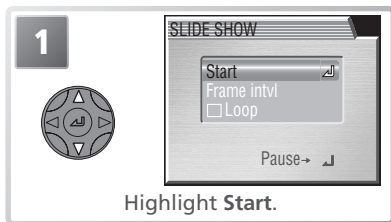


This option is used to play back the pictures in the current folder an automated “slide show.” Hidden pictures are not played back.

Option	Description
Start	Start slide show.
Frame intvl	Choose how long each picture is displayed.
Loop	If this option is checked, slide show will repeat until center of multi selector is pressed.

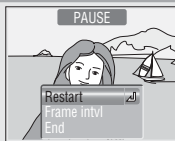


To view a slide show:

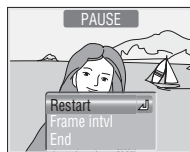


Pictures will be played back one after the other in the order recorded, with a pause between each frame. Movies are displayed as still images showing the movie's first frame. The following operations can be performed during the show:

To	Press	Description
Pause slide show		Menu shown at right will be displayed. To resume slide show, highlight Restart and press center of multi selector. Select End to end slide show and return to full-frame playback.
Go forward or back one frame		Press multi selector up or left to go back one frame, down or right to skip ahead to next frame.
End slide show	MENU	End slide show and return to full-frame playback.

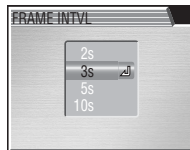


When the slide show ends, the pause menu will be displayed. Press the multi selector to the left to return to the playback menu, or press the **MENU** button to exit to full-frame playback.



Changing the Display Interval

The slide show menu on the previous page and the pause dialog shown above contain a **Frame intvl** option for choosing how long each picture will be displayed. To change the display interval, highlight **Frame intvl** and press the center of the multi selector. The menu of interval settings shown at right will be displayed; highlight the desired setting and press the multi selector to the right.



Auto Off

The camera will enter standby mode if no operations are performed for thirty minutes during a slide show.

Frame Interval

Owing to differences in file size and the speed at which pictures can be read from the memory card, the actual interval may differ from the value selected.


Protect

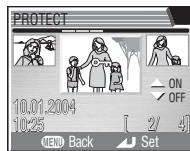


MENU

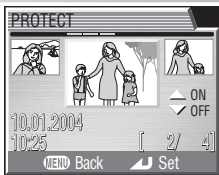


Protect

This option is used to protect pictures from accidental deletion. Protected files can not be deleted by pressing the  button or using the options in the **Delete** menu. Note, however, that protected pictures *will* be deleted when the memory card is formatted.

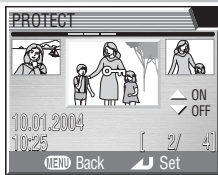



1



Scroll through pictures. Current picture shown at center of display.

2



Select current picture. Selected pictures marked by  icon.

3

Repeat steps 1–2 to select additional pictures. To deselect picture, select and press multi selector up or down.

4



Complete operation.


Hide Image



MENU

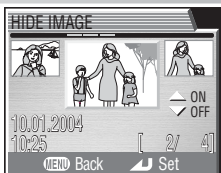


Hide image

When creating a slide show or showing pictures to an audience, the **Hide image** option can be used to hide selected pictures. Hidden pictures are visible only in the **Hide image** menu and can not be deleted with the  button or the delete options in the playback and folder menus. Note, however, that hidden pictures *will* be deleted when the memory card is formatted.

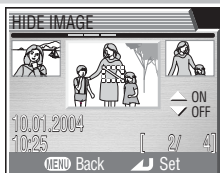



1



Scroll through pictures. Current picture shown at center of display.

2



Select current picture. Selected pictures marked by  icon.

3

Repeat steps 1–2 to select additional pictures. To deselect picture, select and press multi selector up or down.

4



Complete operation.

"ALL IMAGES ARE HIDDEN"

If all pictures in the current folder are hidden, the message "ALL IMAGES ARE HIDDEN" will be displayed in review and full-frame playback. No pictures can be viewed until another folder has been selected or **Hide image** is used to reveal some of the pictures in the current folder.

Print Set



MENU



Print set

Print set is used to select pictures for printing on devices that support PictBridge or Digital Print Order Format (DPOF), to choose the number of copies to be printed, and to specify the information to be included with each print. For information on printing the pictures in the print order, see "More on Playback: Printing Pictures" (📖 79).



Option	Description
Print selection	Create or modify print order as described below.
Delete print set	Cancel print order. Print marking will be removed from all images, but no pictures will be deleted.

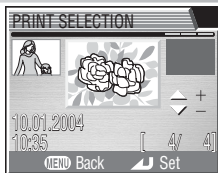
To create a print order or modify the existing print order:

1



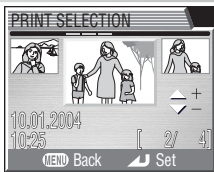
Highlight **Print selection**.

2



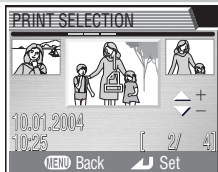
Display selection dialog.

3



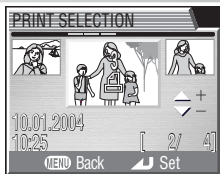
Scroll through pictures. Current picture shown at center of display.

4



Select current picture and set number of prints to 1. Selected pictures marked by 📄 icon.

5




Use multi selector to specify number of prints (up to 9). To deselect picture, press multi selector down when number of prints is 1. Repeat steps 3–5 to select additional pictures.

6



Complete print order and display menu of print options.


- To print date of recording on all pictures in print order, highlight **Date** and press center of multi selector. **On** will appear next to item.
- To print shutter speed and aperture on all pictures in print order, highlight **Info** and press center of multi selector. **On** will appear next to item.
- To turn selected item off, highlight and press center of multi selector.

To complete print order and return to playback, highlight **Done** and press center of multi selector. Pictures in current print order are indicated by  icon in playback mode.

Print Set

If the menu shown in Step 6 is displayed after a print order is created, the **Date** and **Info** options will be reset.

"Date"

If **Date** is selected in the print set menu, the date of recording will appear on any pictures printed using devices that support the DPOF date function. Note that the information printed on the image will not be correct unless the camera clock was set correctly when the picture was taken ( 15).



Auto Transfer

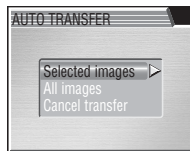


MENU



Auto transfer

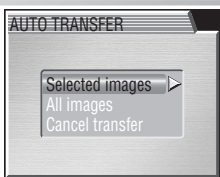
When the camera is connected to a computer running PictureProject, pictures can be transferred (copied) to the computer (76). PictureProject can be used to transfer all pictures or only those pictures selected in advance using **Auto transfer** (in playback mode, these pictures are indicated by a icon). For more information, see the *Quick Start Guide* and the *PictureProject Reference Manual*.



Option	Description
Selected images	Select pictures for transfer.
All images	Mark all pictures for transfer.
Cancel transfer	Remove transfer marking from all pictures.

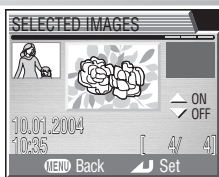
Marking Selected Pictures for Transfer

1



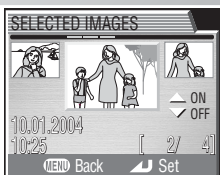
Highlight **Selected images**.

2



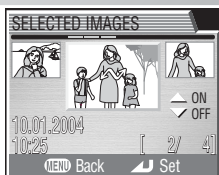
Display selection dialog.

3



Scroll through pictures. Current picture shown at center of display.

4



Select current picture. Selected pictures marked by icon.

5

Repeat steps 3–4 to select additional pictures. To deselect picture, select and press multi selector up or down.

6

Complete operation.

Marking All Pictures for Transfer

1Highlight **All images**.**2**

Confirmation dialog displayed. Press multi selector up or down to highlight option, press center to select:

- Select **Yes** to select all pictures for transfer
- Select **No** to exit without selecting pictures for transfer

Restrictions on Auto Transfer

No more than 999 pictures can be transferred using **Auto transfer**. To transfer more than 999 pictures, use PictureProject to transfer all pictures, or select and transfer pictures in batches of 999 or less.

The COOLPIX 8400 can not be used to transfer pictures selected for transfer with another model of Nikon digital camera. Use the COOLPIX 8400 to reselect the pictures.

Move Image

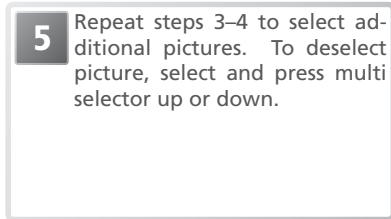
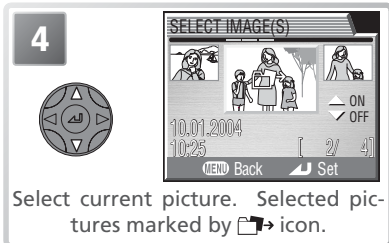
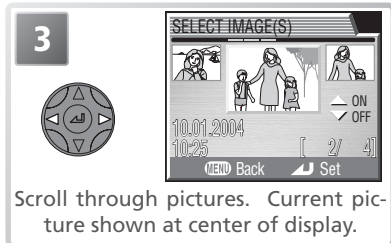
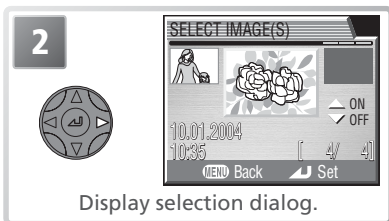
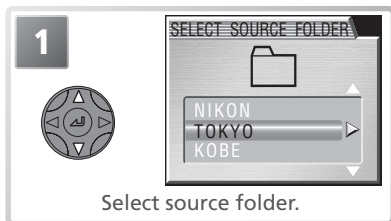
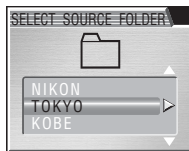


MENU



Move image

To move pictures to another folder on the memory card:



Source/Destination Folders

The following can not be selected as source or destination folders:

- Folders created at **Ultra HS** (folder names begin with "N_")
- Folders created using **Intvl timer shooting** (folder names begin with "INTVL")
- Folders created at a setting of **Panorama assist** (folder names begin with "P_")

7



Highlight destination folder.

8



Confirmation dialog displayed. Press multi selector up or down to highlight option, press center to select:

- Select **Yes** to move pictures to selected folder
- Select **No** to exit without moving pictures

CF Card Format

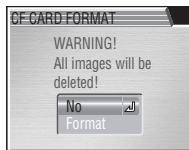


MENU



CF card format

CF card format formats memory cards for use in the camera. See “The Shooting Menu: CF Card Format” (👁 112).



Small Pic



MENU



Small pic.

Small pic controls the size of copies created with the small picture option (👁 72). Choose from sizes of 640×480, 320×240, and 160×120.



📄 info.txt

Moving pictures deletes the associated entries from the info.txt file (👁 140).

📄 File Names

When a picture is moved, it will be assigned a new file number generated by adding one to the highest file number in the destination folder. The identifier (DSCN, RSCN, SSCN, FSCN) and extension (.NEF, .TIF, .JPG, .MOV) will not change.

The Setup Menu

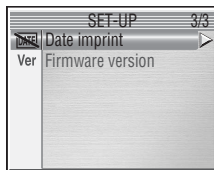
The setup menu contains the following options:



SET-UP 1/3	
Language	131
Date	131-132
Folders	133
Monitor options	133-135
Seq. numbers	136
Shutter sound	137
Auto off	138

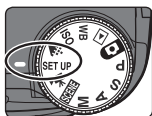


SET-UP 2/3	
CF card format	138
Controls	138-139
Shot confirmation	140
info.txt	140
USB	141
Video mode	141
Reset all	141



SET-UP 3/3	
Date imprint	142
Firmware version	142

The setup menu is displayed when the mode dial is rotated to **SET UP**.



To exit the setup menu, rotate the mode dial to another setting.

Language

SET UP → Language

Choose the language for camera menus and messages from **Deutsch** (German), **English**, **Español** (Spanish), **Français** (French), **Italiano** (Italian), **Nederlands** (Dutch), **Svenska** (Swedish), 日本語 (Japanese), 中文(简体) (Simplified Chinese), 中文(繁體) (Traditional Chinese), and 한글 (Korean).



Date

SET UP → Date

The date menu contains the following options:

Option	Description
Date	Set camera to current date and time (🕒 15–16).
Time zone	Choose home and travel destination time zones; turn daylight saving time on or off.



Choosing Home and Travel Destination Time Zones

Selecting **Time zone** in the **Date** menu displays the menu shown in Step 1.

1

Highlight **Time zone** option for home (🏠) or travel destination (➔).

2

Display map of world time zones.

3

Highlight time zone.*


4

Return to time zone menu.

* Travel destination time zone can not be same as home time zone. To exit without changing selected time zone, press **MENU** button.


To switch between home and travel destination time zones:

1



Highlight home (🏠) or travel destination (➔) time zone (dot marks item currently selected).*

2



Select highlighted time zone. Clock set to time in selected zone.

* To turn daylight saving time on or off, highlight **DaylightSaving** and press multi-selector right. Selecting daylight saving time advances time in selected zone one hour. To exit without changing settings, press **MENU** button.

Time Zones

The time zone can not be selected if the date and time have not been set.

The camera supports the time zones listed below. Increments of less than one hour are not supported; when travelling to or from destinations at half- or quarter-hour increments from Greenwich Mean Time (GMT), such as Afghanistan, Central Australia, India, Iran, Nepal, or Newfoundland, set the camera clock to local time (🕒 15–16).

GMT +/-	Location
GMT -11	Midway, Samoa
GMT -10	Hawaii, Tahiti
GMT -9	Alaska, Anchorage
GMT -8	PST (PDT): Los Angeles, Seattle, Vancouver
GMT -7	MST (MDT): Denver, Phoenix, La Paz
GMT -6	CST (CDT): Chicago, Houston, Mexico City
GMT -5	EST (EDT): New York, Toronto, Lima
GMT -4	Caracas, Manaus
GMT -3	Buenos Aires, São Paulo
GMT -2	Fernando de Noronha
GMT -1	Azores
GMT	London, Casablanca

GMT +/-	Location
GMT +1	Madrid, Paris, Berlin
GMT +2	Athens, Helsinki
GMT +3	Moscow, Nairobi
GMT +4	Abu Dhabi, Dubai
GMT +5	Islamabad, Karachi
GMT +6	Colombo, Dhaka
GMT +7	Bangkok, Jakarta
GMT +8	Beijing, Hong Kong (HK), Singapore
GMT +9	Tokyo, Seoul
GMT +10	Sydney, Guam
GMT +11	New Caledonia
GMT +12	Auckland, Fiji

Folders

SET UP ➤  Folders

In addition to creating, renaming, and deleting folders (🔗 116–118), the folders option in the setup menu can be used to select the folder in which subsequent pictures will be stored (🔗 119).



Monitor Options

SET UP ➤  Monitor options

The options in this menu control the quality of the preview displayed in the monitor, whether pictures are displayed after shooting (picture review), monitor brightness and hue, and the welcome screen displayed when the camera is turned on.



Release Speed

In **P**, **S**, **A**, and **M** modes, this option can be used to minimize the delay between the shutter-release button being pressed and the picture being taken, at the cost of a slight drop in the quality of the preview image displayed in the monitor.



Option	Description
Normal	Priority given to quality of preview image.
Quick response	Reduces lag between shutter-release button being pressed and shutter being released when shooting stills (movies are not affected). [*] Horizontal lines may appear in preview image; final picture is not affected.

^{*} If a picture is taken during picture review, the focus, exposure, and auto white-balance settings used in the previous shot will apply to the new picture. To ensure a quick response, the built-in Speedlight may not fire if a picture is taken during picture review; optional Speedlights may not fire if **Continuous** is set to **Single** (🔗 88).

Review Options

This option controls whether pictures are displayed after shooting in **P**, **S**, **A**, and **M** modes (picture review).

Option	Description
Review On	Pictures are displayed for about one second after shooting.
Review Off	Pictures are not displayed after shooting.



Brightness

This option controls monitor brightness. Press the multi selector up or down to increase or decrease brightness. The results of any changes are immediately visible in the center of the display. Press the center of the multi selector to put the change into effect and return to the setup menu. To exit without changing monitor brightness, press the multi selector to the left.




Hue

This option controls monitor hue (tone). The results are visible in the center of the display. Press the center of the multi selector to put the change into effect and return to the setup menu. To exit without changing monitor hue, press the multi selector to the left.



"Brightness" and "Hue"

These options can not be adjusted while the EG-CP14 A/V cable is connected ( 75); changes to brightness and hue are not reflected in the television display.

Start-up Display

Start-up display controls which display activates when the camera is turned on (the **SEL** button can be used to switch between displays once the camera is on).

Option	Description
Monitor On	Monitor turns on at startup. Viewfinder turns on automatically if monitor is closed.
Viewfinder On	Viewfinder turns on at startup.



Welcome Screen


Choose the welcome screen displayed when the camera is turned on.



Option	Description
Disable welcome	No welcome screen displayed when camera is turned on.
Nikon	Image shown at right is displayed when camera is turned on.
Select an image	Choose welcome screen from pictures on memory card. Press multi selector left or right to scroll through pictures, press center of multi selector to select. To exit without changing welcome screen, press MENU button.



Welcome Screen

If **Reset all** ( 141) is used to reset settings to default values, **Welcome screen** will be reset to **Nikon**. If **Select an image** is chosen after settings have been reset, the image last selected for **Select an image** will be restored.

If **Select an image** is chosen after a custom welcome screen has been selected, the confirmation dialog shown at right will be displayed. Select **Yes** to replace the existing picture with the new welcome screen, **No** to exit leaving the welcome screen unchanged.



Seq. Numbers

SET UP → ON | Seq. numbers

Pictures are assigned file names that include a four-digit file number assigned by adding one to the largest file number in the current folder. This option controls how file numbers are assigned when a new folder is created, a new memory card is inserted, or the memory card is formatted. For more information on file and folder names, see “Image File and Folder Names” (25).



Option	Description
On	When new folder is created, new memory card inserted, or memory card formatted, file numbering continues from last number used. This minimizes number of images with same file name, making it easier to manage images after transfer to computer.
Off	File numbering reset to 0001 when new folder is created, new memory card inserted, or memory card formatted.
Reset	Clears last file number from memory. If memory card is formatted or empty memory card inserted before Reset is selected, file numbering will begin from 0001. If memory card already contains pictures, next file number will be generated by adding one to highest file number in current folder.

Shutter Sound

SET UP → ON | Shutter sound

Shutter sound controls the “beep” made by the camera speaker.

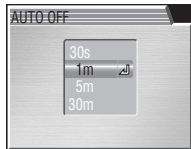


Option	Description
On	<p><i>Camera beeps once to confirm that:</i></p> <ul style="list-style-type: none">• camera has completed preparations for shooting• manual focus has been activated• images have been deleted or memory card formatted• option other than Normal selected for Lens• changes have been made to Protect, Hide image, Print set, Auto transfer, Move image, or Slide show > Loop settings• daylight saving time has been turned on or off <p>• On has been selected for Shutter sound</p> <p><i>Camera beeps twice to confirm that:</i></p> <ul style="list-style-type: none">• shutter-release button has been fully pressed to release shutter (no beep will sound if Release speed is set to Quick response) <p><i>If camera beeps three times when shutter-release button is pressed:</i></p> <ul style="list-style-type: none">• memory card is full or not inserted, or• batteries are exhausted <p><i>Camera beeps continuously during timer countdown (self-timer or remote-control photography).</i></p>
Off	Confirmation and warning beeps disabled. Voice memos and sound recorded with movies can still be played back.

Auto Off

SET UP ➤ 1m/Auto off

When operated on battery power, the camera will enter standby mode if no operations are performed for the length of time selected in the AUTO OFF menu. Choose from thirty seconds (**30s**), one minute (**1m**, the default setting), five minutes (**5m**), or thirty minutes (**30m**). In standby mode, all camera functions are deactivated and the camera itself is effectively off, consuming almost no power. The camera can be reactivated by rotating the mode dial to another setting, by pressing the **MENU**, **Q/CLICK**, or **DISP** buttons, or by pressing the shutter-release button halfway. Regardless of the option chosen in the AUTO OFF menu, the monitor will remain on for three minutes when menus are displayed. The camera will not enter standby mode while connected to a computer.



CF Card Format

SET UP ➤ [CF] CF card format

CF card format formats memory cards for use in the camera. See “The Shooting Menu: CF Card Format” (112).



Controls

SET UP ➤ [FUNC] Controls

This menu contains the following options:

Option	Description
FUNC	Specify function performed by FUNC button.
AE-L, AF-L	Specify function performed by AE/AF-L button.

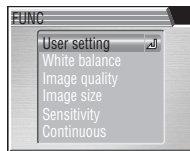


Using an AC Adapter

When powered by an optional EH-54 AC adapter, the camera will remain on for thirty minutes if no operations are performed, regardless of the setting chosen in the **Auto off** menu. If the camera is connected to a video device, video output will continue indefinitely after the camera display has turned off.

FUNC

Assigning frequently-used functions to the **FUNC** button allows the selected settings to be adjusted without accessing the camera menus in **P**, **S**, **A**, and **M** modes.



Option	Description
User setting	User Setting bank can be selected by pressing FUNC button and rotating command dial (🔘 95).
White balance	White balance (🔘 53) can be set by pressing FUNC button and rotating command dial. White balance can not be fine-tuned using FUNC button. Camera will measure new value for preset white balance if FUNC button is kept pressed.
Image quality	Image quality (🔘 33) can be set by pressing FUNC button while rotating command dial.
Image size	Image size (🔘 34) can be set by pressing FUNC button while rotating command dial.
Sensitivity	Sensitivity (ISO equivalency; 🔘 51) can be set by pressing FUNC button while rotating command dial.
Continuous	Continuous option (🔘 88) can be selected by pressing FUNC button while rotating command dial.

AE-L, AF-L

By default, both focus and exposure are locked when the **AE/AF-L** button is pressed. If desired, the button can be set to lock only one of focus and exposure.



Option	Description
AE-L & AF-L	AE/AF-L button locks both focus and exposure.
AE-L	AE/AF-L button locks exposure only. Focus locks when shutter-release button is pressed halfway.
AF-L	AE/AF-L button locks focus only. Exposure locks when shutter-release button is pressed halfway.

Shot Confirmation

SET UP ➔ OFF Shot confirmation

If **On** is selected for this option, the self-timer lamp will light after shooting to confirm that the shutter has been released. When **Multi-shot 16** or **5 shot buffer** is selected for **Continuous**, the lamp will light after all pictures in the series have been taken. The lamp will not light at a setting of **Ultra HS** or if the flash fired when the picture was taken.



info.txt

SET UP ➔ OFF info.txt

When pictures are recorded with **On** selected for **info.txt**, information about each image is added to an independent text file ("info.txt") stored in the same folder as the picture. When the contents of the memory card are viewed on a computer, this file can be read with a text browser such as Notepad or SimpleText. If **Off** (the default option) is selected, photo information will no longer be recorded to the info.txt file. Information about pictures recorded when **Off** is selected can still be viewed in the photo information display (📷 68–69).



When **On** is selected, the following information is recorded:

- File number and type
- Camera type and firmware version
- Metering mode
- Exposure mode
- Shutter speed
- Aperture
- Exposure compensation
- Focal length and digital zoom factor
- Image adjustment
- Sensitivity (ISO equivalency)
- White balance
- Image sharpening
- Date of recording
- Image size and quality
- Saturation control
- Active focus area

Images are listed in the order recorded, separated by a blank line.

info.txt

The info.txt file can not be transferred to a computer using PictureProject. It can be copied using normal Explorer or Finder operations when the camera **USB** option is set to **Mass storage**.

USB

SET UP ➤ USB

USB configures the camera for connection to a computer or printer. See “Viewing Pictures on a Computer” (🔗 76) and “Printing Pictures: Printing Via Direct USB Connection” (🔗 80).



Video Mode

SET UP ➤ Video mode

Before connecting the camera to a video device such as a television or VCR (🔗 75), choose a video mode setting that matches the video standard used by the device. The camera supports NTSC and PAL standards.

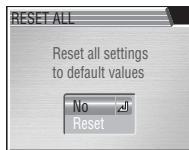


Reset All

SET UP ➤ Reset all

Restore settings to default values.

Option	Description
No	Exit menu, leaving settings unchanged.
Reset	Restore all settings except shooting mode, exposure mode, Language , Date , Video mode , and USB to default values.

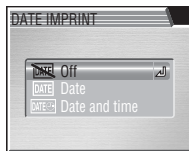


Date Imprint

SET UP ➤ **DATE** Date imprint

The date imprint option is used to imprint the date or the date and time of recording on pictures as they are recorded to the memory card. It can not be used to imprint a date stamp on pictures after recording.

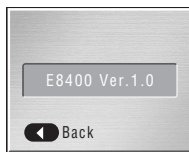
Option	Description
Off	Time and date do not appear on pictures.
Date	Date is imprinted on pictures taken while this option is in effect.
Date and time	Date and time are imprinted on pictures taken while this option is in effect.



Firmware Version

SET UP ➤ **Ver** Firmware version

Select this option to display the current camera firmware version. Press the multi selector to the left to return to the setup menu.

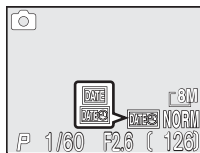


Date Imprint

Data imprinted at a size of **rTV** (640×480), **rPC** (1,024×768), or **r1M** (1,280×960) may be difficult to read.

Regardless of the setting chosen, the date is not imprinted in movie **(M)** 58) or panorama assist **(PA)** 31) mode or at an image quality of RAW **(R)** 33) or **Continuous** settings of **Continuous H**, **Ultra HS**, or **5 shot buffer** **(S)** 88).

Imprinted data form a permanent part of the image and will appear whenever the image is printed, regardless of whether the date option is chosen in the **Print set** menu. At settings other than **Off**, a date imprint icon appears in the shooting display during shooting. Check before shooting to make sure that the camera clock is set to the correct time and date.



The date is recorded in the order selected in the DATE menu. **Date imprint** can not be selected if the camera clock has not been set **(C)** 15–16).

Technical Notes

Optional Accessories

At the time of writing, the following optional accessories were available for this camera. Contact your local retailer or Nikon representative for details.

Rechargeable batteries/ Battery packs/ AC adapters	<ul style="list-style-type: none">• Additional EN-EL7 rechargeable Li-ion batteries are available from your retailer or local Nikon representative• EN-EL7e rechargeable Li-ion batteries (with charge indicators; not available in some areas)• MB-CP10 battery pack• EH-54 AC adapter
Carrying case	CS-CP20 soft case
PC card adapters	EC-AD1 PC card adapter
Converter lenses (require lens adapter ring)	<ul style="list-style-type: none">• FC-E9 fisheye converter (0.2 ×)• WC-E75 wide-angle converter (0.75 ×)• TC-E3ED telephoto converter (3 ×)• TC-E3PF telephoto converter (3 ×)
Lens adapter rings	<ul style="list-style-type: none">• UR-E14 lens adapter ring for WC-E75• UR-E15 lens adapter ring for TC-E3ED and TC-E3PF• UR-E16 lens adapter ring for FC-E9
Lens hoods	HN-CP12 lens hood
COOLPIX filters	<ul style="list-style-type: none">• Nikon FF-CP10 NC neutral color (NC) filter• Nikon FF-CP10 CPL circular polarizing filter• Nikon FF-CP10 ND4 neutral density (ND) filter
Optional Speedlights and accessories	<ul style="list-style-type: none">• SB-800, SB-600• SC-29 and SC-28 sync cables for off-camera flash unit

✔ Use Only Nikon-Approved Flash Accessories

Use only Nikon Speedlights. Negative voltages or voltages over 250V applied to the accessory shoe could not only prevent normal operation, but could damage the sync circuitry of the camera or flash. Before using a Nikon Speedlight not in the list above, contact a Nikon-authorized service representative for more information.

✍ Converters, Lens Hoods, and Filters

Converter lenses and attachments can not be used with lens hoods or with the COOLPIX filters listed above. Remove any filters or hoods before attaching a converter.

Approved Memory Cards

The following cards have been tested and approved for use with the COOLPIX 8400:

Nikon	EC-CF	All capacities
SanDisk	CompactFlash (SDCFB)	32 MB, 64 MB, 128 MB, 256 MB, 512 MB
	Ultra (SDCFH)	128 MB, 256 MB, 512 MB
	Ultra II (SDCFH)	256 MB
Lexar Media	4 × USB	16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB
	8 × USB	
	12 × USB	64 MB, 128 MB, 256 MB, 512 MB
	16 × USB	
	24 × USB	
	24 × WA USB	
Renesas Technology (Hitachi)	Compact FLASH HB28	128 MB, 256 MB, 512 MB
Microdrive		1 GB, 2 GB, 4 GB

Operation is not guaranteed with other makes of card. For more details on the above cards, please contact the manufacturer.

Memory Cards

- Memory cards may be hot after use. Observe due caution when removing memory cards from the camera.
- Format memory cards before first use.
- Turn the camera off before inserting or removing memory cards. Do not remove memory cards from the camera, turn the camera off, or remove or disconnect the power source during formatting or while data are being recorded, deleted, or copied to a computer. Failure to observe these precautions could result in loss of data or in damage to the camera or card.
- Do not touch the card terminals with your fingers or metal objects.
- Do not apply force to the card casing. Failure to observe this precaution could damage the card.
- Do not bend, drop, or subject to strong physical shocks.
- Do not expose to water, heat, high levels of humidity, or direct sunlight.

Caring for Your Camera

To ensure continued enjoyment of your Nikon product, observe the following precautions when storing or using the device:

- ✔ **Keep dry**
The device will be damaged if immersed in water or subjected to high levels of moisture.
- ✔ **Handle the lens and all moving parts with care**
Do not apply force to the lens, monitor, or to the connector, card slot, or battery chamber covers. These parts are especially susceptible to damage.
- ✔ **Do not point the lens at strong light sources for extended periods**
Avoid pointing the lens at the sun or other strong light sources for extended periods when using or storing the camera. Intense light may cause deterioration in the CCD image sensor, producing a white blur effect in photographs.
- ✔ **Turn the product off before removing or disconnecting the power source**
Do not unplug the product or remove the batteries while the product is on, or while images are being recorded or deleted. Forcibly cutting power in these circumstances could result in loss of data or in damage to product memory or internal circuitry. To prevent an accidental interruption of power, avoid carrying the product from one place to another while the AC adapter (available separately) is connected.
- ✔ **Do not drop**
The product may malfunction if subjected to strong shocks or vibration.
- ✔ **Keep away from strong magnetic fields**
Do not use or store this device in the vicinity of equipment that generates strong electromagnetic radiation or magnetic fields. Strong static charges or the magnetic fields produced by equipment such as radio transmitters could interfere with the display, damage data stored on the memory card, or affect the product's internal circuitry.
- ✔ **Avoid sudden changes in temperature**
Sudden changes in temperature, such as occur when entering or leaving a heated building on a cold day, can cause condensation inside the device. To prevent condensation, place the device in a carrying case or a plastic bag before exposing it to sudden changes in temperature.
- ✔ **The AF-Assist Illuminator LED**
The light-emitting diode (LED) used in the AF-assist illuminator conforms to the following IEC standard:



Cleaning

Lens/Electronic Viewfinder

One key to preserving the condition of these glass parts is to not touch them with your fingers. Remove dust or lint with a *blower* (typically a small device with a rubber bulb attached to one end that is pumped to produce a stream of air out the other). To remove fingerprints or other stains that can not be removed with a blower, wipe the lens or viewfinder with a soft cloth, using a spiral motion that starts in the center of the lens and works out to the edges.

Monitor

Remove dust or lint with a blower. To remove fingerprints and other stains, clean the monitor with a soft, dry cloth, being careful not to apply pressure.

Avoid contact with liquid crystal

Should the monitor or electronic viewfinder break, care should be taken to avoid injury due to broken glass and to prevent the liquid crystal from the monitor touching the skin or entering the eyes or mouth.

Body

Use a blower to remove dust and lint, then wipe gently with a soft, dry cloth. After using the camera at the beach or seaside, wipe off any sand or salt with a cloth lightly dampened with fresh water, then dry thoroughly.

Do not use alcohol, thinner, or other volatile chemicals.

Notes on the Monitor and Electronic Viewfinder

- The monitor and electronic viewfinder may contain a few pixels that are always lit or that do not light. This is a characteristic common to all TFT LCD displays, and does not indicate a malfunction. Images recorded using the product will not be affected.
- When you frame bright subjects, vertical comet-like streaks that whiten toward either end may appear in the display. This phenomenon, known as “smear,” does not appear in the final photograph and does not indicate a malfunction. Some smear may appear in movies.
- Images in the monitor may be difficult to see in a bright light.
- The monitor is lit by an LED backlit. Should the monitor begin to dim or flicker, contact your Nikon service representative.

Storage

Turn the camera off when not in use and check that the power-on lamp is off before putting the camera away. To prevent mold or mildew, store the camera in a dry, well-ventilated area. If you will not be using the product for long periods, run the battery flat and remove it from the camera to prevent leakage. Store the camera in a plastic bag containing a desiccant, but do not store the camera case (available separately) in a plastic bag, as this may cause the material to deteriorate. Note that desiccant gradually loses its capacity to absorb moisture and should be replaced at regular intervals. Do not store the camera with naphtha or camphor moth balls or in locations that:

- are poorly ventilated or damp
- are next to equipment that produces strong electromagnetic fields, such as televisions or radios
- are exposed to temperatures below -10°C (14°F) or above 50°C (122°F); for example near a space heater or in a closed vehicle on a sunny day
- are subject to humidities of over 60%

To prevent mold or mildew, take the camera out of storage at least once a month. Turn the camera on and release the shutter a few times before putting the camera away again.









When the battery is not in use, replace the terminal cover and store the battery in a cool, dry place. The battery should be recharged at least once a year; run the battery flat before returning it to storage.

Batteries




- Check the battery level when taking the camera out and charge the battery if necessary (🔋 9). Do not continue charging once the battery is fully charged, as this will result in reduced battery performance. If possible, carry a fully-charged spare battery when taking pictures on important occasions.
- For increased battery life, use the electronic viewfinder where possible.
- On cold days, the capacity of batteries tends to decrease. Be sure that the battery is fully charged before heading outside to take pictures in cold weather. Keep spare batteries in a warm place and exchange as necessary. Once warmed, a cold battery may recover some of its charge.
- Dirt on the battery terminals can prevent the camera from functioning.
- Used batteries are a valuable resource. Please recycle used batteries in accordance with local regulations.

Error Messages


The following table lists the error messages and other warnings that appear in the monitor and how to deal with them.

Display	Problem	Solution	
 (Flashes)	Clock not set.	Set clock to current date and time.	15
WARNING !! BATTERY EXHAUSTED	Battery exhausted.	Charge battery.	9
THIS BATTERY CANNOT BE USED	Battery inserted in camera is not EN-EL7.*	Use EN-EL7 battery.	9
BATTERY ERROR	Battery malfunction.*	Cease use and take battery to Nikon-authorized service representative.	—
REPLACE BATTERY	Battery can no longer be used.	Replace with new EN-EL7 battery.	—
 NO CARD PRESENT	Camera can not detect memory card.	Turn camera off and confirm that memory card is correctly inserted.	12
 THIS CARD CANNOT BE USED	Error accessing memory card.	<ul style="list-style-type: none"> • Use approved card. • Check that connectors are clean. 	144 —
 WARNING !! THIS CF CARD CANNOT BE READ		<ul style="list-style-type: none"> • Turn camera off and confirm that memory card is correctly inserted. 	12
 CARD IS NOT FORMATTED 	Memory card has not been formatted for use in camera.	Press multi selector down to highlight FORMAT and press center to format card, or turn camera off and replace card.	112
 OUT OF MEMORY	<i>Camera in shooting mode:</i> Insufficient memory to record pictures at current settings.	<ul style="list-style-type: none"> • Reduce image quality or size. • Insert new memory card or delete pictures. 	33 12, 114
	<i>Camera connected to computer:</i> Not enough space on memory card to record information need for transfer.	Disconnect camera, delete unwanted pictures, and try again.	78, 114

* **Err** appears in control panel.

Display	Problem	Solution	
IMAGE CANNOT BE SAVED	<ul style="list-style-type: none"> • Memory card has not been formatted for use in camera, or error occurred while saving picture. • Camera has run out of file numbers. • Camera can not copy picture using quick edit or crop options. 	<ul style="list-style-type: none"> • Reformat memory card. • Insert new memory card or delete pictures. • Copies can not be created from movies or from other copies. 	112 12, 114 71, 72
CARD CONTAINS NO IMAGES	No pictures on memory card, or current folder contains no images.	To view pictures, select folder containing pictures in Folders menu.	119
ALL IMAGES ARE HIDDEN	All pictures in current folder are hidden.	Select another folder or use Hide image to change hidden status of pictures in current folder.	123
MONITOR OFF*	Monitor has been left on for extended period, activating circuit protection. Battery temperature not in range 0–40°C/32–104°F.	Turn camera off and wait a few minutes before turning camera on again. Wait until temperature returns to operating range.	14 —
FILE CONTAINS NO IMAGE DATA	File created by computer or different make of camera.	View file on computer or correct make of camera.	76
THIS IMAGE CANNOT BE DELETED	Attempt to delete protected picture.	Remove protection before deleting picture.	122
THE FOLDER CANNOT BE DELETED	Folder contains hidden or protected pictures, or pictures not created with COOLPIX 8400.	Remove hidden or protected marking from pictures. Folder can not be deleted if it contains pictures not created with COOLPIX 8400.	122, 123
NEW CITY IS IN THE CURRENT TIME ZONE	Travel destination is in same time zone as home location.	No need to specify new time zone if travel destination is in same time zone as home location.	131
WARNING! MODE DIAL IS NOT IN THE PROPER POSITION	Mode dial positioned between two modes.*	Rotate mode dial to select desired mode.	8
WARNING!! NO MENU IN AUTO MODE PLEASE USE ANOTHER MODE	 button pressed in mode.	Choose another mode before pressing  button.	8

* **Err** appears in control panel.

Display	Problem	Solution	
SPEEDLIGHT IS IN THE CLOSED POSITION	Speedlight prevented from popping up when required for additional lighting.*	Remove finger or other object from Speedlight and press shutter-release button halfway.	19
LENS ERROR*	<ul style="list-style-type: none"> • Object caught between lens and camera body. • Error has occurred during lens operation. 	After removing any obstructions, turn camera off and then on again. If error persists, contact retailer or Nikon service representative.	—
COMMUNICATIONS ERROR	USB cable disconnected or memory card removed while pictures are being printed or transferred.*	If computer displays error, click OK to exit Picture Project. Turn camera off, reconnect cable or replace memory card, and resume printing or transfer.	12 77
PRINTER ERROR	Problem during printing.	Press multi selector up or down to highlight option and press center to select. Select Resume to resume printing, Cancel to exit without printing all images.	84
SYSTEM ERROR	Error has occurred in camera's internal circuitry.*	Turn camera off, unplug optional AC adapter (if using), remove and reinsert battery, and turn camera on. If error persists, contact retailer or Nikon representative.	10




* **Err** appears in control panel.


Troubleshooting


If the camera fails to function as expected, check the list of common problems below before consulting your retailer or Nikon representative. Refer to the page numbers listed in the right-most column for information on solving the problems listed here.

Electronically-Controlled Cameras

In extremely rare instances, unusual characters may appear in the display and the camera may stop functioning. In most cases, this phenomenon is caused by a strong external static charge. Turn the camera off, remove and replace the battery, and turn the camera on again, or, if you are using an AC adapter (available separately), disconnect and reconnect the adapter, and turn the camera on again. In the event of continued malfunction, contact your retailer or Nikon representative. Note that disconnecting the power source as described above may result in the loss of any data not recorded to the memory card at the time the problem occurred. Data already recorded to the memory card will not be affected.

Problem	Solution	
Camera turns off without warning	<ul style="list-style-type: none">• Battery is low.• Battery is cold.	17
		147
Control panel is blank	<ul style="list-style-type: none">• Camera is off.• Battery is not correctly inserted or battery-chamber cover is not properly latched.• Battery is exhausted.• AC adapter (available separately) is not properly connected.• Camera is in energy-saving mode. Press shutter-release button halfway.• Camera is shooting time-lapse movie.• Interval-timer shooting in progress.	14
		10
		17
		—
		14
		62
		90
Monitor is blank	<ul style="list-style-type: none">• Electronic viewfinder is on. Press SEL button.• Lens cap is on. Remove lens cap.• USB cable is connected. Disconnect USB cable.• A/V cable is connected. Disconnect A/V cable.• Camera is shooting time-lapse movie.• Interval-timer shooting in progress.	4
		1
		77
		75
		62
		90
Indicators are not displayed	<ul style="list-style-type: none">• Indicators are hidden. Press  button until indicators are displayed.• Slide show is in progress.	5,
		65
		120

Problem	Solution	
Monitor is hard to read	<ul style="list-style-type: none"> • Ambient lighting too bright: use electronic viewfinder. • Monitor brightness needs adjustment. • Monitor is dirty: clean monitor. 	4 134 146
No picture is taken when shutter-release button is pressed	<ul style="list-style-type: none"> • Camera is in playback mode. • Battery is exhausted. • Number of exposures remaining is zero: insufficient memory to record picture at current image quality and size settings. • Flash indicator blinks: flash is charging. • Camera displays "CARD IS NOT FORMATTED": memory card is not formatted for use in camera. • Camera displays "NO CARD PRESENT": no memory card inserted. 	65 17 21 20 112 12
Pictures are too dark (underexposed)	<ul style="list-style-type: none"> • Flash is off. • Flash window is blocked. • Subject is outside range of flash. • Exposure compensation is too low. • Shutter speed blinks: shutter speed too fast. • Aperture blinks: f/-number too high. 	37 19 38 44 47 48
Pictures are too bright (overexposed)	<ul style="list-style-type: none"> • Exposure compensation is too high. • Shutter speed blinks: shutter speed too slow. • Aperture blinks: f/-number too low. 	44 47 48
Pictures are out of focus	<ul style="list-style-type: none"> • Subject not in focus area when shutter-release button was pressed halfway or AE/AF-L button was pressed. • Camera can not focus on selected subject using autofocus. Use focus lock. 	100 22
Pictures are blurred	<ul style="list-style-type: none"> • Camera shook during shot: choose faster shutter speed. If shutter speed can not be increased without causing underexposure: <ul style="list-style-type: none"> ◆ Use flash ◆ Raise sensitivity (ISO equivalency) ◆ Select larger aperture (smaller f/-number) To minimize blur at slow shutter speeds: <ul style="list-style-type: none"> ◆ Use Best Shot Selector (BSS) ◆ Mount camera on tripod and use self-timer 	47 37 51 48 91 41
Pictures contain randomly-spaced bright pixels ("noise")	<ul style="list-style-type: none"> • Sensitivity (ISO equivalency) too high. • Shutter speed too slow. At shutter speeds of 1/4 s or slower, turn noise reduction on. 	51 109
Bright specks in picture	Flash is reflecting from particles in air. Turn flash off or zoom in.	18 37

Problem	Solution	
Flash does not fire	• Flash is off. Flash turns off automatically when: ◆ Focus mode is set to ▲ (infinity)	40
	◆ Landscape, Sunset, Night landscape, Museum, Fireworks show, Close up, Copy, Panorama assist, Sports, or Dusk/Dawn selected in scene mode	26
	◆ Option other than Time-lapse movie is selected in movie mode.	58
	◆ Option other than Single or Intvl timer shooting selected for Continuous	88
	◆ BSS or AE-BSS is on	91
	◆ Lens is set to option other than Normal	97
	◆ Speedlight ctrl is set to Internal off	105
	◆ Optional Speedlight is attached and Speedlight ctrl set to Auto	105
Digital zoom unavailable	• Image quality set to RAW or HI.	33
	• Multi-shot 16 or Ultra HS selected for Continuous .	88
	• Black&white selected for Saturation control .	94
	• Option other than Normal selected for Lens .	97
	• Off selected for Zoom options>Digital tele .	103
ML-L3 remote control can not be used	• Self-timer is off.	41
	• Museum, Fireworks show, or Sports selected in scene mode.	29
	• Camera is in movie mode.	58
Colors are unnatural	• White balance does not match light source.	53
	• Color saturation is too low or too high.	94
File can not be played back	File has been overwritten or renamed by computer or other make of camera.	—
Can not use quick edit or crop options	• Pictures are displayed in quick review.	65
	• Picture can not be cropped or edited.	71–73
	• Not enough memory on memory card. Delete pictures.	114
Can not zoom in on picture	• Picture is a movie.	58
	• Picture was created with small picture option.	72
	• Picture has been cropped to below 320×240.	71
No picture displayed on TV	A/V cable not correctly connected, TV not tuned to video channel, or Video mode not set correctly.	75, 141

Problem	Solution	
PictureProject does not start when camera is connected or memory card inserted in card reader or card slot	• Camera is off.	14
	• AC adapter (available separately) is not properly connected, or batteries are exhausted.	11
	• USB cable is not correctly connected, or card not properly inserted in card reader or card slot.	12, 77
	• USB item in setup menu set to PTP when camera connected to computer running Windows 2000, Windows Me, or Windows 98 SE.	77
	• Camera is not registered in Device Manager (Windows only). See <i>PictureProject Reference Manual</i> (on CD) for further information.	—

Specifications

Type	E8400 digital camera
Effective pixels	8.0 million
CCD	$\frac{2}{3}$ " CCD; total pixels: 8.31 million
Image size (pixels)	<ul style="list-style-type: none"> <li style="width: 33%;">• 3,264 × 2,448 (8M) <li style="width: 33%;">• 3,264 × 2,176 (3:2) <li style="width: 33%;">• 2,592 × 1,944 (5M) <li style="width: 33%;">• 2,048 × 1,536 (3M) <li style="width: 33%;">• 1,600 × 1,200 (2M) <li style="width: 33%;">• 1,280 × 960 (1M) <li style="width: 33%;">• 1,024 × 768 (PC) <li style="width: 33%;">• 640 × 480 (TV)
Lens	3.5 × Zoom-Nikkor ED lens
Focal length	F=6.1–21.6 mm (35-mm [135] camera-format equivalent: 24–85 mm)
f/-number	f/2.6–f/4.9
Construction	10 elements in 7 groups (includes 2 glass-molded ED lens elements)
Digital zoom	Up to 4 × (35-mm [135] camera-format equivalent: 340 mm)
Autofocus (AF)	Ranging AF using AF ranging sensor and contrast-detect through-the-lens (TTL) AF with AF-assist illuminator
Focus range	50 cm (1'8")–∞; 3 cm (1.2")–∞ (W)/20 cm (7.9")–∞ (T) in macro and manual focus modes
Focus-area selection	Center; auto 5-area multi AF; manual 9-area multi AF
AF-assist illuminator	Class 1 LED product (IEC60825-1 Edition 1.2 ²⁰⁰¹); max. output: 1900 μW
Viewfinder	0.44", 235,000-dot, polysilicon TFT color LCD viewfinder
Magnification	Approximately 0.2–0.7 ×
Frame coverage	Approximately 97% horizontal and 97% vertical
Diopter adjustment	–3–+1 m ⁻¹

Unless otherwise stated, all figures are for a camera with a fully-charged EN-EL7 battery operated at an ambient temperature of 25 °C (77 °F).

Monitor	1.8", 134,000-dot, High Transmissive Advanced TFT LCD monitor with brightness and hue adjustment
Frame coverage	Approximately 97% horizontal and 97% vertical (shooting)
Exposure	
Metering	Four mode through-the-lens (TTL) metering: <ul style="list-style-type: none"> • 256-segment matrix • Center-weighted • Spot • Spot AF area
Exposure control	Programmed auto exposure with flexible program, shutter-priority auto, aperture-priority auto, manual, exposure compensation (-2.0+2.0 EV in 1/3 EV steps), autoexposure bracketing, AE-BSS
Range	W: 0+18.5 EV T: +1.5+18.5 EV
Shutter	
Speed	2-1/3,000 s (auto and exposure mode P), 8-1/3,000 s (exposure modes S and A), BULB/TIME (max. 10 min.) and 8-1/3,000 s (exposure mode M), 1/30-1/8,000 s (Ultra HS). Maximum at some apertures is 1/1,500 s.
Aperture	
Range	Seven-blade iris diaphragm. Ten settings in steps of 1/3 EV (to minimum of f/7.9)
Sensitivity	Approximately equivalent to ISO 50, 100, 200, 400; Auto
Self-timer	10s or 3s; can be used with supplied ML-L3 remote control
Built-in Speedlight	
Range (Auto ISO)	W: 0.5-6.0 m/1'8"-19'8" T: 0.5-3.0 m/1'8"-9'10"
Sync method	Standard i-TTL flash
Accessory shoe	Standard ISO hot-shoe contact with safety lock
Sync contact	X-contact only
Storage	
Media	Type I and II CompactFlash™ (CF) and Microdrive cards
File system	Compliant with Design Rule for Camera File System (DCF)*, Exif 2.2†, and Digital Print Order Format (DPOF)
File formats	Uncompressed: RAW (NEF), TIFF-RGB Compressed: JPEG-baseline-compliant (1:2, 1:4, 1:8, 1:16) Movies: QuickTime Sound files: WAV
Interface	USB 2.0 high speed
Video output	Can be selected from NTSC and PAL
Supported languages	Chinese (Simplified and Traditional), Dutch, English, French, German, Italian, Japanese, Korean, Spanish, Swedish

* A standard widely used in the digital camera industry to ensure compatibility among different makes.

† Exchangeable Image File Format for Digital Still Cameras. Version 2.2 allows information stored with pictures to be used for optimal color reproduction when images are output on Exif-compliant printers.

I/O terminals	DC in; digital I/O (audio-visual out and USB)
Power sources	<ul style="list-style-type: none"> • One rechargeable Nikon EN-EL7 lithium-ion battery (supplied) • MB-CP10 battery pack (available separately) with six AA (LR6) alkaline, lithium, NiCad, or NiMH batteries • EH-54 AC adapter (available separately)
Battery life	Approximately 260 shots (EN-EL7; based on CIPA standard*)
Dimensions	113 × 82 × 75 mm/4.4" × 3.2" × 3.0" (W × H × D)
Approximate weight	400 g (14 oz) without battery or memory card
Operating environment	
Temperature	0–40°C (32–104°F)
Humidity	Less than 85% (no condensation)

* Industry standard for measuring life of camera batteries. Measured at 25°C (77°F); zoom adjusted with each shot, built-in Speedlight fired with every other shot, image mode set to NORMAL/Ⓜ.

MH-56 Battery Charger




Rated input	AC 100–240V, 50/60Hz, 0.19–0.12 A
Charging output	DC 8.4 V/800mA
Compatible batteries	Nikon EN-EL7 rechargeable Li-ion batteries
Charging time	Approximately 2.5 hrs when no charge remains
Operating temperature	0–40°C (+32–104°F)
Dimensions	75 mm × 30 mm × 85 mm/3.0" × 1.2" × 3.3" (W × H × D)
Length of cord	Approximately 1800 mm (70.9")
Weight	Approximately 94 g (3.3 oz), excluding power cable

EN-EL7 Rechargeable Li-ion Battery

Type	Rechargeable lithium-ion battery
Rated capacity	7.4 V/1100 mAh
Dimensions	36 mm × 56 mm × 16 mm/1.4" × 2.2" × 0.6" (W × H × D, excluding projections)
Weight	Approximately 70 g (2.5 oz), excluding terminal cover

Specifications

Nikon will not be held liable for any errors this manual may contain. The appearance and specifications are subject to change without notice.

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